

AUGUST 1960

BUTANE-PROPANE *News*



TRANSPORTATION
ISSUE

A CHILTON PUBLICATION

HEADQUARTERS FOR L.P. GAS INFORMATION SINCE 1931

YOU ARE
APPROACHING
THE DEADLINE...

JULY							AUGUST							SEPTEMBER						
Sun	Mon	Tue	Wed	Thur	Fri	Sat	Sun	Mon	Tue	Wed	Thur	Fri	Sat	Sun	Mon	Tue	Wed	Thur	Fri	Sat
3	4	5	6	7	8	9	1	2	3	4	5	6	7	1	2	3	4	5	6	7
10	11	12	13	14	15	16	8	9	10	11	12	13	14	8	9	10	11	12	13	14
17	18	19	20	21	22	23	15	16	17	18	19	20	21	15	16	17	18	19	20	21
24	25	26	27	28	29	30	22	23	24	25	26	27	28	22	23	24	25	26	27	28
							29	30	31					29	30	31				

for receiving *All* the benefits
from filling your customers' storage
during the summer months.

Be Sure ALL YOUR TANKS
AND YOUR CUSTOMERS' TANKS
ARE FILLED BY SEPTEMBER 1st.



Contact Our Nearest Sales Office.

WARRENGAS
the Concentrated fuel



WARREN PETROLEUM CORPORATION
TULSA, OKLAHOMA

DISTRICT SALES OFFICES

COLUMBIA, S. C. • FT. WORTH, TEXAS • MIDLAND, TEXAS
NEW YORK, N. Y. • HOUSTON, TEXAS • OMAHA, NEBR.
JACKSON, MISS. • ST. LOUIS, MO. • LOUISVILLE, KY.
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BRYN MAWR, PA. • ATLANTA, GA. • NEW HAVEN, CONN.
MONTGOMERY, ALA. • JACKSON, MICH. • FOND DU LAC, WIS.
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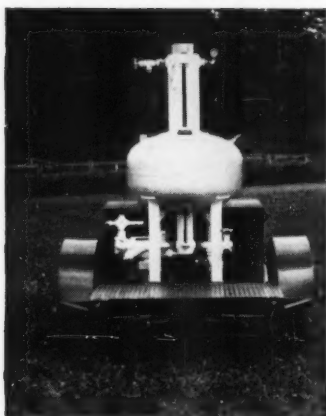
However, wherever, you haul LP-Gas...

Hackney quality pays off through the years



Hackney T-1 transports

Engineered to deliver more miles of service for every dollar you invest in LP-Gas transports. Capacities to meet your legal load limits. Optional equipment to suit your hauling strategy.



Know How Your Meters Measure

Check your meters regularly with the Hackney liquid meter prover, and reduce your meter losses and increase profits. Ask for Bulletin MP-1.

Write for prices and specifications

Our branch managers are at your service
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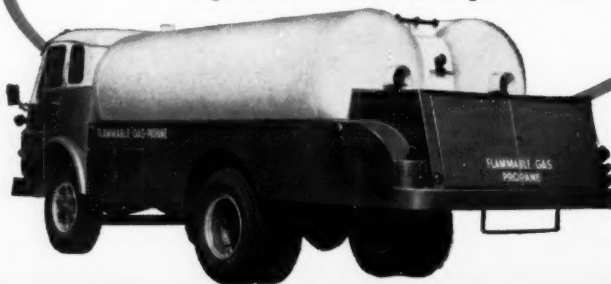
Hackney single-barrel trucks

Designed to speed local deliveries. Faster pumping, simplified plumbing. Water capacities of 2500 and 2800 gallons. Built with all latest safety features and complies with ICC MC-330.



Hackney twin-barrel trucks

Low center of gravity improves stability. Rear delivery saves time. Water capacities of 1770, 2170 and 2402 gallons. Built-in safety features and complies with ICC MC-330 specifications.



Hackney
DIVISION OF

Pressed Steel Tank Company

Manufacturer of Hackney Products

1487 South 66th Street, Milwaukee 14, Wisconsin
Branch offices in principal cities

LP-GAS CONTAINERS FROM ONE POUND TO 30,000 GALLONS



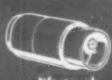
cylinders



systems



fuel tanks for trucks and tractors



lift truck cylinders



tank trucks

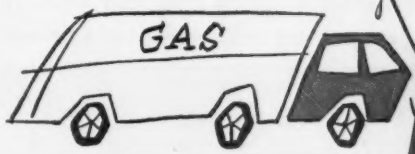


transports



bulk storage tanks

Is your capital tied up in account receivables



If slow pay is your headache, vapor metering is a sure cure. With meters you'll make it easy for your customers to pay. Meter readings will replace those large "as delivered" fuel bills with small "pay as you use" statements. These are charges that customers will learn to anticipate and budget for—charges that they can and will honor promptly.

Lowered account receivables is only one of many good reasons why you should look into the money saving, money earning advantages of metering.

Write for our "tells all" bulletin ADV. 41. Rockwell Manufacturing Company, Pittsburgh 8, Pennsylvania. In Canada: Rockwell Manufacturing Company of Canada, Ltd., Guelph, Ontario.

VAPOR METERING *will improve your profit picture*

THE METER THAT STAYS NEW, SAVES MONEY IN SERVICE

The clean cut lines of Rockwell meters assure your customers that the accuracy of your measurement matches the quality of your service. They are strong and safe, easy to handle and install, weatherproof and durable. The capacity rating of 240,000 Btu's per hour is ample for most any service.



That First Look Starts The Sale On Its Way! *That first look your customer gives a beautifully designed WARM MORNING Gas Heater puts her (or him) in a buying mood. When you explain and show the exceptional WARM MORNING comfort and convenience features and quote the bargain-low prices, chances are your sale is made. Prove it to yourself. Put WARM MORNING Gas Heaters on your sales floor and see how they sell! The line is complete and the advertising and promotional support for WARM MORNING dealers is the strongest ever. Why wait? Write for literature and prices.*

A black and white illustration featuring a rectangular gas heater on the left and a woman on the right. The heater has a glass front revealing a burner assembly with a 'BUTANE-PROPANE' label. The woman is wearing a light-colored jacket over a dark dress and a striped scarf, looking towards the heater. The background is dark with several starburst patterns. At the bottom of the illustration, the text 'Warm Morning' is written in a large, stylized script, with 'GAS HEATERS' in a smaller, spaced-out sans-serif font below it.

Warm Morning
GAS HEATERS

LOCKE STOVE COMPANY 114 West 11th Street, Kansas City 5, Missouri

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BPN

BEHIND THE SCENES

A CHILTON PUBLICATION

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Editorial and advertising offices:
198 So. Alvarado St., Los Angeles 57
Phone DUNkirk 7-4337



Pardon our prying, but . . .

In spite of what we in the editorial department would like to think, the circulation department is the real backbone of any kind of publishing venture. Prose, no matter how deathless, is also worthless if it doesn't get "circulated."

The department has a tough job. It would be a snap if nobody ever: (a) died, (b) retired, (c) was hired, (d) was fired. But people do, and are, practically every day in the year. So circulation's work goes on and on and on, day after day and year after year, perpetually and endlessly.

And we might also add that new businesses are formed, and old businesses die. (And then, of course some old businesses never die, they just become Suburban subsidiaries.)

Now we suppose all this change wouldn't mean a whole lot to *Saturday Evening Post*. You pays your money and you buys your magazine, and who you are—whether you are "qualified" to buy it—is of no consequence. And if you die three months after you've renewed for three years, the unfulfilled term would be part of your widow's inheritance.

Not so with a "trade magazine" (which is what BPN is, in case you didn't know). To be a reader, you've got to qualify. You must be a dealer, a dealer's employee, or a reasonable facsimile (such as a producer or a transporter). So you run a drugstore? Sorry, old buddy. The answer is no. You just can't buy a subscription, for love or even for money.

Now don't get mad. The reason is really very simple. Nearly all of our income is from our advertisers. They would be very unhappy if we sent BPN to drugstores. That would be "waste circulation." (Who in a drugstore would ever be in the

market for a T-1 transport? Now I ask you.) And since circulation is a money-losing proposition for trade magazines, if we went to, say 20,000 drugstores, we'd have to increase our advertising rates. And what good would 20,000 pharmacists (who can only read Latin and doctors' prescriptions, anyway) be?

And that's why, by George, we've got to qualify you. That's why, every once in a while, our circulation department has to send you a nosy little note asking a bunch of impudent questions. And if you don't answer them, our auditors (an independent outfit, by the way, and we mean independent) will get very mean and say you aren't qualified. And if you aren't qualified, well then you just can't buy yourself a subscription at any price.

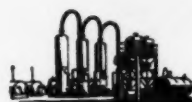
We're pleased to report you've been very nice and cooperative in the past. We've always been able to "verify" all but a meaningless thimbleful of BPN's readership. For which we say thank you, and may this happy arrangement continue on and on and on, day after day and year after year, perpetually and endlessly.

BACK TALK

Gasoline-minded?

Mankato, Minn.

It looks like you are starting a series of articles by a carburetion engineer. The first article in the June issue is a good, general article; but, apparently, the fellow is gasoline-minded. In mentioning the instruments, he missed the No.



In celebration of our 60th year of world-wide progress . . .

A Genuine Coleman gas-lite

Yours to give now as a
"buyer's bonus" when
you install



America's Only Bonded Line Heating and Air Conditioning

This new Coleman Gas-Lite is the key to the most complete and most exciting business-building program ever offered through heating and air conditioning dealers. Most complete because it includes every imaginable aid to selling. Most exciting because it gets an enthusiastic response from everyone in the market for heating or air conditioning.

Here's the plan. As an anniversary salute, we're making it possible for you to offer a genuine Coleman Gas-Lite to your customer with the installation of any Coleman central furnace, wall heater, floor furnace or air conditioner. It's an offer your prospects will go for when you give them the lamp as a bonus for buying now! For more information, use the coupon below or call your Coleman distributor for your complete program kit containing full details—right away!

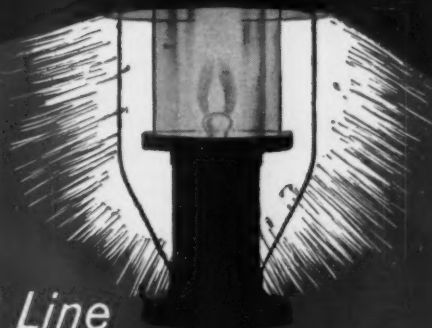


Best selling tool of all - you offer this exclusive \$500 bond with every unit you sell

Coleman's Gas-Lite promotion will be announced to home owners in the March 26 Saturday Evening Post



Also makers of famous Vit-Rock water heaters, Decorama space heaters, Coleman lanterns, camp stoves, jugs and coolers—mobile home heating and air conditioning.



Works on any gas—installs 4 ways
Can be mounted on post (as at left)



Can be hung on wall

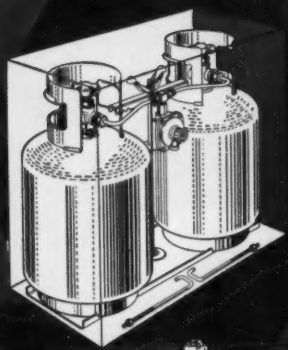


Can be installed on wall with decorative bracket

•The Coleman Company, Inc., Wichita 1, Kansas

Quickly send more information on your Gas-Lite promotion.

Name _____ Title _____
Firm Name _____
Address _____
City _____ Zone _____ State _____



**Factory
Assembled
...Ready for
Service**

*New 20 lb. Trailer
Package by...*
WEATHERHEAD



Now! Boost sales volume the fast, easy, efficient way with Weatherhead factory-assembled 20 lb. mobile home cylinder packages. Thousands have been sold — a tremendous display of dealer confidence in the right system at the right price.

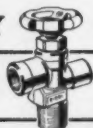
Order the Magic Model
3400 Series
for your brand
of sales magic!

* Other changeover
combinations available

YOU GET
Two 20 lb. ICC Cylinders
One Tee Check Manifold*
One LP Gem Regulator
Two Pigtails
Two Standard Cylinder Valves
One Double Cylinder Rack

SPECIFY MAGIC MODEL 3400

includes 21001



Standard Cylinder Valves

...OR MAGIC MODEL 3403

includes 21017 Cylinder Valves



equipped with 10%
outage gauge

Call your Weatherhead Representative or write:



**WARRANTY
PROTECTION ON
ALL WEATHERHEAD
LP-GAS PRODUCTS**

THE WEATHERHEAD COMPANY
LP-Gas Equipment Division
Cleveland 8, Ohio

The Weatherhead Co. of Canada Ltd., St. Thomas, Ont., Canada
Export Division: Cleveland Ohio • Cable Address: WEATHER

SINCE 1919... 40 Years of Manufacturing Experience

Back talk

1 instrument in any gas serviceman's kit — namely — the water manometer. That means that he doesn't use one, and tell me what the difference is between an LPG-burning engine and an LPG-burning furnace? The one exception is that the furnace is fed at about 11 in. of water and positive pressure, whereas the gas-burning engine is fed at approximately atmospheric pressure. However, the pressure variations are just as important with one as with the other.

C. F. BUTTERWORTH
Acme Carburetion, Inc.

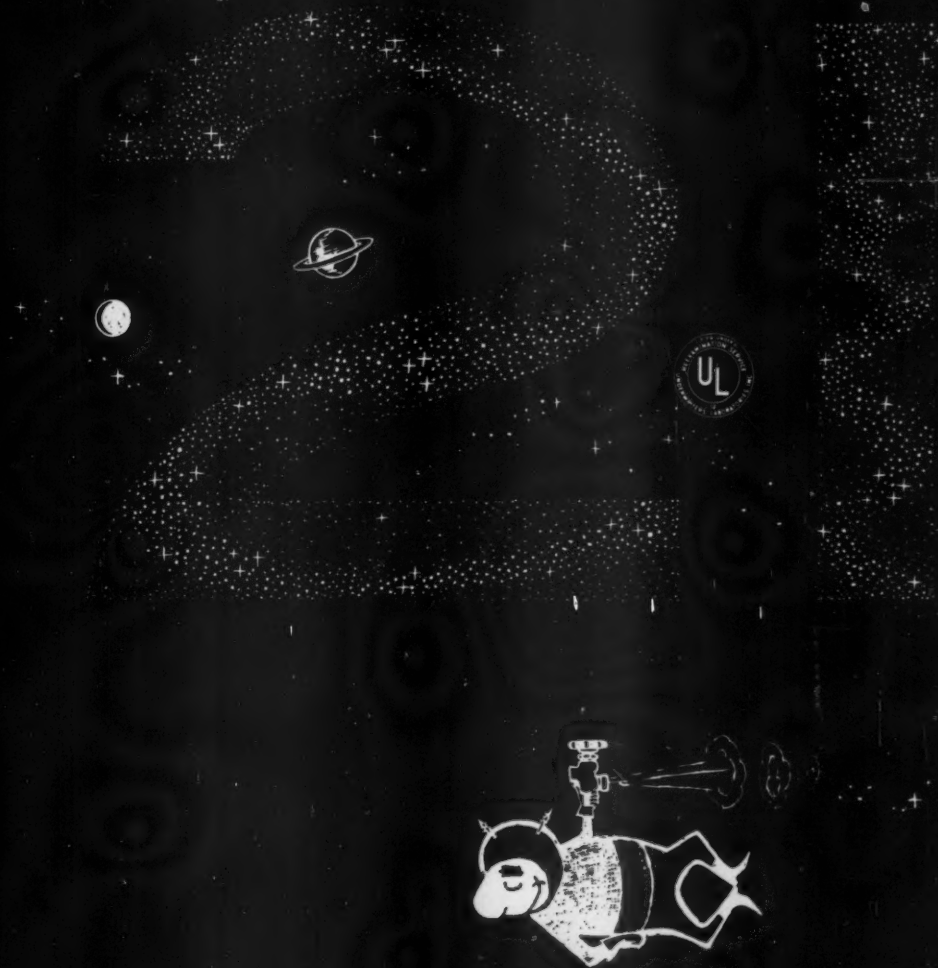
In answer to Mr. Butterworth's letter: An experienced L. P. gas man will use a water manometer to good advantage, particularly in checking out convertors. But, I would caution a newcomer in the LPG carburetion field against making adjustments with a water manometer before he becomes proficient at reading one accurately. Our convertors are all set at the factory with a water manometer; between three-and-four-tenths of an inch of water, to be exact, which is less, I would think, than it would take to draw on a cigarette. (Being a non-smoker I couldn't be sure.) I, for one, cannot read a water manometer within one-tenth of an inch of water with any consistency. So, I would say, in the beginning leave the water manometer alone. Later on, perhaps, you could use one to good advantage.

JOHN E. HALLBERG



"OH SHUT UP! IT WAS YOUR
IDEA TO REALLY GO BEYOND
THE MAINS!"

21 ways better than the automatic regulator you are now using



seLpac master-matic

is the new star in automatic regulation
because it is



ENGINEERED TO SPACE AGE SPECIFICATIONS

SP → LP GAS DIVISION

seLpac

SELWYN-PACIFIC CO. • P.O. BOX 51031 • LOS ANGELES 61, CALIF.



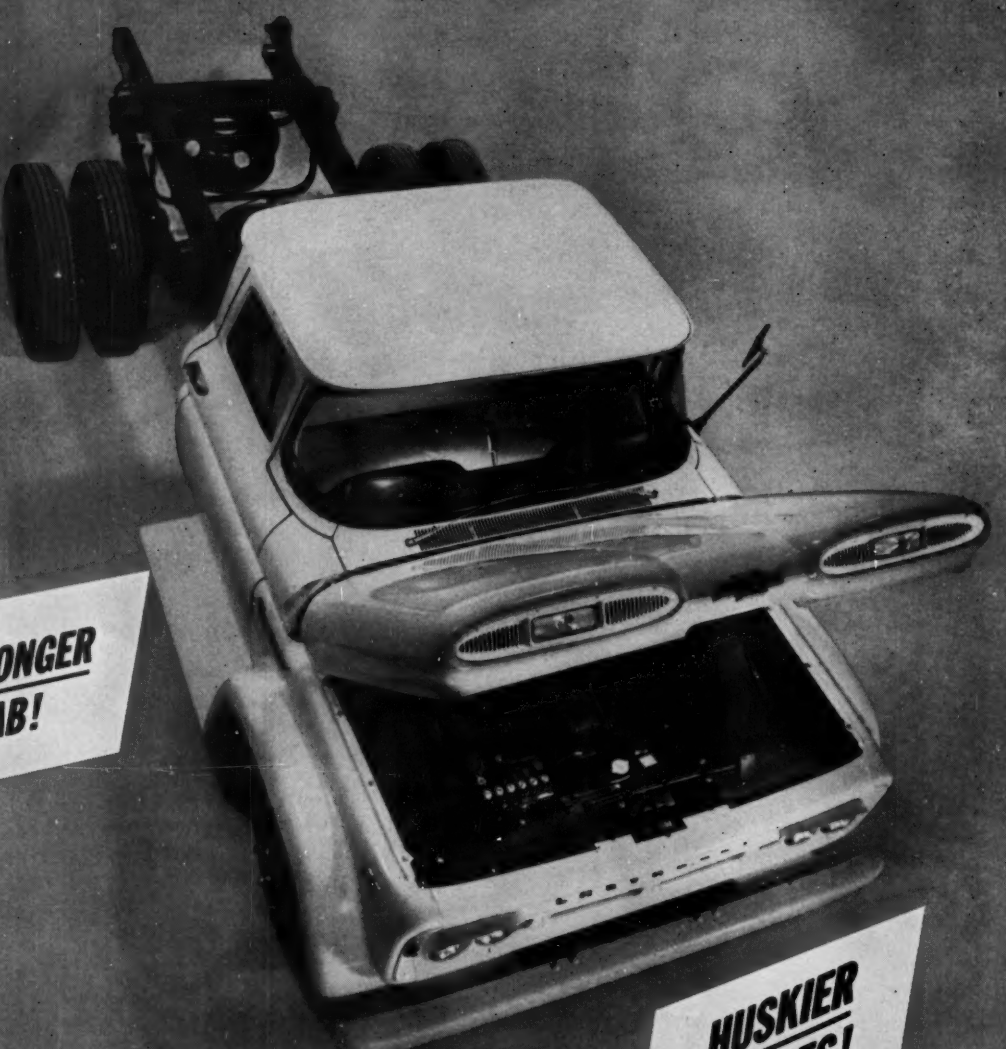
DIVING DIVISION



COMPRESSED GAS DIVISION



FIRE EXTINGUISHER DIVISION



**STURDIER
CHASSIS!**

**STRONGER
CAB!**

**HEFTIER
SUSPENSION!**

**HUSKIER
ENGINES!**

CHEVY'S PUT TOGETHER TO STAY TOGETHER... TO CLAMP DOWN ON COSTS!

NEW STRONGER CAB CONSTRUCTION . . . to add years to the life of your truck. Tough new steel braces reinforce cab underbody, help keep cab tight and solid, provide a sturdy foundation for long cab life. Husky new box-section pillars frame door openings; keep doors in lasting alignment. New roof panel is double walled for extra strength.

NEW STURDIER CHASSIS COMPONENTS . . . steel muscled truck stamina where it counts! New frames provide a new box-section rail design that's stronger than ever; torsional stiffness is increased up to 480%! Massive "X" or "K" brace cross-members resist damage from frame twisting like never before. And brakes are bigger, for longer brake life and safer stopping. Bigger capacity suspensions and axles boost load-carrying ability.

TRUCK-BUILT V8's AND 6's . . . famous Chevy engines that know the most about saving money on fuel and maintenance. Brawny forged steel crankshafts assure extra endurance; long-lasting precision bearings minimize wear; full-flow oil filters protect moving parts from harmful dirt. These and many other truck-built engine features provide sure dependability that keeps your maintenance costs down for extra thousands of miles.

NEW HEFTIER SUSPENSION protects everything from wear and tear . . . and gives the ride that's revolutionized trucking. Chevy's new independent front suspension system is as tough as it is smooth. Rigid control arms, strong alloy steel torsion-bar springs, new low friction steering linkages are engineered to take your toughest runs with strength to spare.


Here are the strongest truck components known . . . assembled lastingly, with care and craftsmanship. It's Chevrolet's way of making sure you get maximum truck life; extra assurance of higher profits because of far fewer maintenance and repair charges.

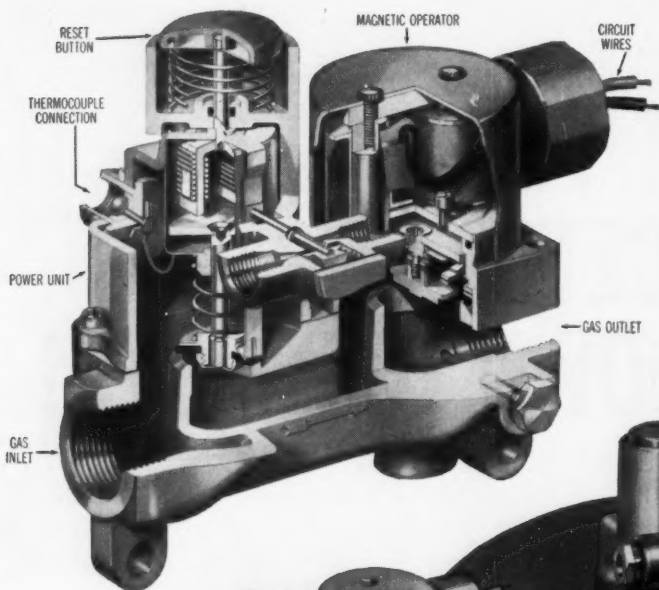
■ When it comes to putting out a good day's work at least expense, a '60 Chevy truck knuckles under to nobody. Because, as we're showing you here, Chevrolet's building 'em *tough* these days, even tougher than ever before. And that's saying something when you consider how Chevrolet trucks have stood up over the years. Here's a typical example:

600,000 miles—and still going strong! Here's ironclad evidence that Chevrolet trucks last. Since 1947, this Chevy middleweight has been averaging 1,000 miles a week, carrying big loads of sand and gravel for Lester Hall of Alexandria, Va. It has logged an amazing total of 600,000 miles and according to the owner, it's still a lot of truck! (The original engine—a Chevrolet Loadmaster 6—went 350,000 miles before it had to be replaced!)



That kind of performance has been Chevy's stock-in-trade for years; and the '60's are designed to put out even more of it. Next time you're in the area, drop by your Chevrolet dealer's. Find out for yourself why more truckers than ever before are getting more work and earnings out of Chevrolet trucks. And make sure you *test drive* a '60 Chevy. You'll wonder how you've managed without one! . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

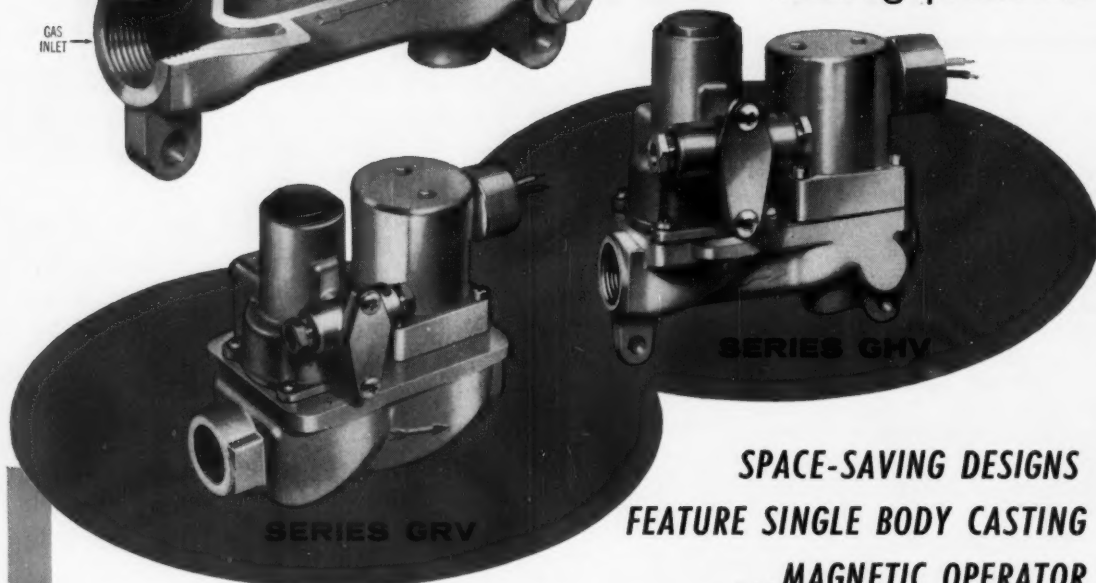
1960 CHEVROLET STURDI-BILT TRUCKS 



NEW!

BASOTROL[®] VALVES

for your gas
heating products



**SPACE-SAVING DESIGNS
FEATURE SINGLE BODY CASTING
...MAGNETIC OPERATOR**

...THERMOELECTRIC POWER UNIT

The silent-operating Basotrol[®] magnetic valves combine a single body casting, a Basotrol bipolar magnetic valve, and a Baso[®] thermoelectric power unit into a compact valve for easy installation. These controls can be provided in any position on the manifold and assure complete shutoff of main burner and pilot burner gas if the pilot burner should be extinguished.

The unique spring-loaded design of the new Series GHV2100 and GRV2100 magnetic valves permits mounting in any position because of strong sealing and positive closing. They are absolutely silent in operation because the oil-filled chamber dampens the action of the valve to assure soundless motion. Each Series of valves has independent pilot gas take-

off, permitting mounting of the regulator either upstream or downstream from the valve.

What's more, the unit can be mounted on the body in any of three positions. The Baso thermoelectric power unit can be placed in two positions. The body casting can have a manual control screw or pressure tapping in the same body.

Basotrol magnetic valves, Series GHV2100 and GRV2100, are available for either low or line voltage service—25v. and 115v., 60c., a.c. Series GHV natural gas capacity 70,000 Btu./hr. at 1" P.D.; 3/8" FPT inlet and outlet. Series GRV natural gas capacity 252,000 Btu./hr. at 1" P.D.; 1/2" FPT inlet and outlet.

For more information write Baso Inc., Dept. SB-3, Milwaukee 1, Wisconsin.

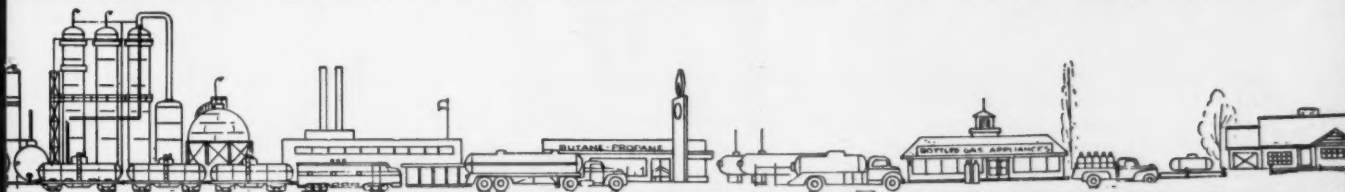
BASO
INC.



Milwaukee 1, Wisconsin

HIGHLIGHTS

BPN



LPG dealers will find small comfort in the Democratic party's Agriculture and Natural Resources planks. Here are three quotes from the party's platform:

"We will encourage agricultural cooperatives by expanding and liberalizing existing credit facilities and developing new facilities if necessary to assist them in extending their marketing and purchasing activities, and we will protect cooperatives from punitive taxation."

"We will maintain interest rates for REA co-ops and public power districts at the levels provided in present law. We promise the co-ops active support in meeting the ever-growing demand for electric power.... on a complete area-coverage basis, without requiring benefits for special interest power groups."

"The Democratic administration...will foster the development of efficient regional giant power systems from all sources..."

Canada's LPG surplus, expected to become a reality late next year, remains a mystery-shrouded problem. A series of Alberta Oil & Gas Conservation Board hearings ended in mid-June with no action taken on Westalta Pipelines Ltd.'s application for a \$150-million pipeline project that would bring 68,000 bbl of LPG per day to the Chicago area. The board reserved decision pending a study of alternative plans, but its ruling appears some time off. The plan drew fire from a host of intervenors and interested parties who said that: the need for such a plan is years away; Westalta's estimates of the coming LPG surplus are grossly optimistic; Canadian needs should be assured satisfaction before export arrangements are made; market-glutting export of a product might upset present pleasant American-Canadian trade relations; and present facilities could be modified to carry foreseeable LPG surpluses to the U. S.

That Sid Richardson salt dome storage patent case (July Highlights) may be settled out of court. Scheduled to begin in mid-July, the case was postponed indefinitely. Several LPG producers were said to be discussing the possibility of purchasing the patent or obtaining a licensing arrangement.

The flameless and the blameless. This fall, Edison Electric Institute will launch a "sharply competitive" \$2.9-million campaign, banging away on the supposedly earth-shaking theme that electricity is better because it is "flameless!" Concentrating on major appliances--rather than small appliances, as was done previously--the new campaign will use all standard promotional devices, but will rely heavily on ads in four big national magazines. The campaign is a product of EEI's new advertising agency. The former agency was apparently blamed for the program that brought unfavorable results in a survey conducted last winter. It seems that two out of three appliance dealers and utility men rated the AGA program above the EEI program!

Man the heat pumps! Northern Illinois Gas Co. says 100 customers in its area scrapped their electric heating systems and went back to gas during February, March, and April! High cost was the main reason. Edison Electric Institute figures offer fine evidence for that complaint, stating that when the average homeowner switches from part-electric living to all-electric living, his annual electric bill goes up 700 per cent, from \$52 to \$425!

Business will be good during the second half, says Judson Sayre, chairman of Norge Div., Borg-Warner Corp. He adds that appliance inventories, which

Continued on next page

Continued

HIGHLIGHTS

were 50 per cent higher than normal at the end of May, will be back where they belong by Aug. 15. Meanwhile, water heater manufacturer Republic-Transcon Industries Inc. reports it is "bucking an industry off-year by chalking up new sales records." And major LPG industry supplier Selwyn-Pacific Co. reports that for the first time in its history, it has had to set up night shifts in all departments!

The Hall-Scott LPG engine is NOT going out of production, contrary to recently circulating rumors. P. O. Peterson, president of Hercules Motors Corp., manufacturer of the Hall-Scott, said the engine will not only be continued, but will be improved and "aggressively promoted in every way possible." He added that improved and expanded facilities should reduce the price.

Unusual new LPG-using products: Ronson Corp., the firm that put LPG in many pockets and purses with its butane lighter, will now put LPG on many dinner tables--with a butane table candle that contains a 10-hour supply....A Florida firm is manufacturing a propane scarecrow which--at timed intervals--sets off small charges with a pop to scare away the pesky birds!

Competition from unexpected sources. Chrysler Corp. has agreed to be U. S. and Canadian marketer for Perkins marine, industrial, and agricultural diesel engines of 25 to 130 hp. A British firm, F. Perkins Ltd. is the world's largest manufacturer of diesel engines and has supplied diesel engines for many Chrysler exports, including trucks and taxis....Day & Night Mfg. Co., veteran gas heating equipment manufacturer, announced in mid-July that it is adding an electric heat pump to its line. The unit will come in two sizes for residential or light commercial use.

Late news from the associations--The law of supply and demand should regulate LPG prices. That's what a Texas state official told LPG men at the annual Texas Butane Dealers Association convention. State Railroad Commission Chairman Ernest O. Thompson warned his audience to guard its free competitive status and to "above all avoid federal power control, the utility franchise, and rate regulation. Good safety regulations (are) all that are necessary."...Oklahoma LPGA has withdrawn approval of wire-braid LPG hose as a result of a number of accidents caused by rusted braid.



CURRENT L. P. GAS & L. R. GAS PRODUCTION & INVENTORIES
(A. P. I. figures - in thousands of gallons)

	Propane	Butane	Bu-Pro Mix	Iso- Butane	Other Mixes	Total LPG	Total LRG
Production (U. S.)							
June '60.....	310,404	147,106	55,253	60,440	66,044	639,247	274,709
June '59.....	284,786	157,226	58,282	51,615	63,275	615,184	249,743
'60 to date....	2,152,597	1,108,699	318,951	350,334	410,023	4,340,604	1,588,683
'59 same period	1,850,325	1,032,540	361,469	306,315	344,619	3,895,178	1,363,324
Inventories (6-30-60)							
Zone A.....	7,174	2,388	10	—	10	9,582	15,366
Zone B.....	54,472	4,073	247	1,006	988	60,786	12,432
Zone C.....	58,038	35,733	486	4,468	130	98,855	12,599
Zone D.....	78,180	8,933	12,069	1,151	221	100,554	653
Zone E.....	111,511	178,895	922	33,593	2,567	327,488	48,039
Zone F.....	210,868	94,908	904	11,759	126	318,565	1,136
Zone G.....	5,335	816	9,032	—	42	15,225	840
Zone H.....	1,109	394	167	203	117	1,990	24,576
U. S.....	526,687	326,140	23,837	52,180	4,201	933,045	115,641
U. S. (6-30-59)	558,635	224,709	37,317	59,130	11,842	891,633	113,545

PROVED WHEREVER BUSINESS BANKS ON GOOD TIRES



TRANSPORT®

ALL TRACTION®

*FIRESTONE T.M.

FIRESTONE PERFORMANCE PAYS OFF WITH LOW-COST-PER-MILE LP GAS DELIVERIES!

Firestone tires' low-cost-per-mile is reflected in performance records of thousands of trucks across the country. That's because 425,000,000 tire miles a year in Firestone's own tire testing program prove Firestone truck tires are your best buy! This vast tire testing program resulted in Firestone Rubber-X, the longest-wearing rubber ever used in Firestone truck tires. It also resulted in Firestone Shock-Fortified cord which means extra miles of service out of every tire. Get performance proved Firestone truck tires, on convenient terms if you wish, at your nearby Firestone Dealer or Store.

Firestone

BETTER RUBBER FROM START TO FINISH

Copyright 1960, The Firestone Tire & Rubber Company



HAUL MORE GAS ... LESS STEEL

THE *Nor-Tex* WAY

- ★ Deliver **EXTRA** Gallons Each Trip!
- ★ Work **FEWER** Hours!
- ★ Drive **LESS** Miles!
- ★ Eliminate **COSTLY** Overtime Expense
- ★ Earn **MORE** Money!

BALANCE YOUR LOAD THE NOR-TEX WAY

TRANSPORTS

You can now haul **MORE GAS** and **LESS STEEL** than ever before with skillfully engineered, smart looking, streamlined Nor-Tex transports of T-1 and A-202B steel. These road-tested units are hauling more gas and substantially boosting profits for users everywhere. Meets latest code ICC-MC-330 requirement. Fittings are recessed for safety. Exclusive Nor-Tex swirlproof SUMP permits easy unloading of **EVERY DROP OF GAS**. Nor-Tex transports are safe and dependable in every way... built by men with years of bulk plant experience. Interested attention, experienced assistance and helpful suggestions are yours for the asking. Write, wire or phone collect today.

Nor-Tex
LOW COST
LPG
Financing

A PLAN TO MEET EVERY NEED



Nor-Tex Bigger Payload Delivery Units

STANDARD

PAYLOAD

CUSTOM

DELUXE

IMPORTANT

2500 WG Nor-Tex Units Weigh Under 23,000 Pounds **LOADED**... Under 13,000 pounds empty, eliminating extra federal highway use tax. Ideal in states imposing ton mile tax.

Bulk plant operators everywhere praise the sleek, **LIGHT-WEIGHT**, streamlined twin or single barrel Nor-Tex LPG Delivery Units. Nor-Tex pioneered **ALUMINUM SKIRTING** and **CABINETS**, and practical engineering designs have reduced over-all weight. 3000 WG units and over, on cab-over or cab-forward trucks, are still within the 18,000-lb. axle limit. Custom designed Nor-Tex high-flow plumbing delivers "extra" gallons faster. For day in, day out efficiency, durability, payload, fast loading, high rated delivery, perfect balance and appearance, Nor-Tex delivery equipment just can't be beat!

All Four Units
Available in Twin
or Single Barrel
Models

BONUS SAVING

As authorized new truck distributors Nor-Tex can save you hundreds of dollars on Internationals... Chevrolets... Fords... Diamond T and GMC's. Order any unit you need. You can't beat a Nor-Tex deal for all-around value.



May We Help You?

Here, at Nor-Tex, interested attention, experienced assistance and helpful suggestions are always yours for the asking. No obligation... write, wire or give us a call.



National Sales Agents for



"Little Nor-Tex"

Ever since it was shown at the Chicago convention folks keep talking about "Little Nor-Tex." This attention-compelling, sales-boosting LPG Service Station is ideal for trailer parks, tourist trade, etc... occupies only 41" diameter.

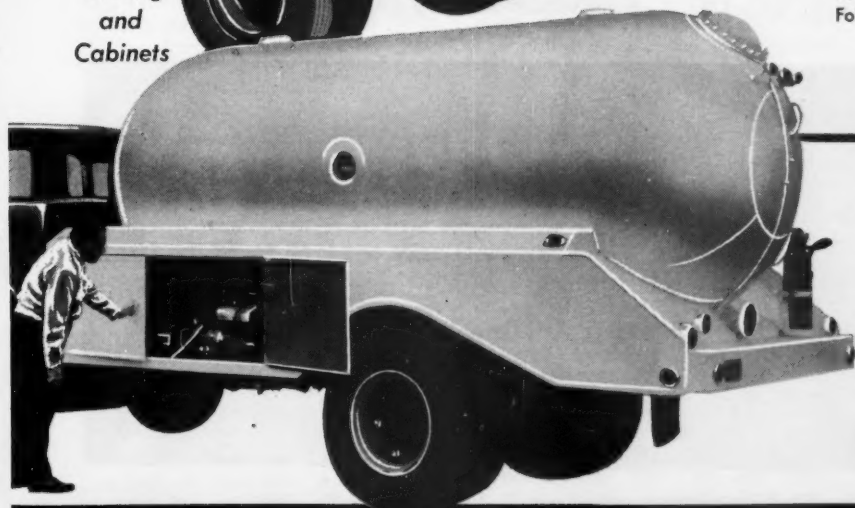


NORTH TEX

... Finance the Balance



Aluminum
Skirting
and
Cabinets



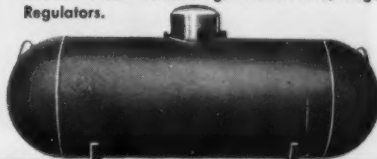
...ROUTE-RATED To Meet Your Need

"Guess-calculation of delivery unit size becomes more and more hazardous as costs increase and profit declines," an LPG Industry report states. It's no wonder our Route-Rating service has grown so popular. Nor-Tex "ROUTE-RATED" units are built to fit your route's need, based on the length of route, the terrain covered, convenience of cabinet location, and number of trips required on peak loads. Follow the simple RULE for PROFIT today.

"Right Sized Units on Right
Sized Chassis For the Job"

THE Nor-Tex STAR

Nor-Tex construction exceeds all safety requirements; thoroughly buffed and cleaned; completely fitted and ready for use; bottom outlets are standard on all above ground tanks. Internal Relief Valve on all "STAR" Systems. Custom made hood. Rego Multi-Valve, Rego Regulators.



AS TANK CO.

DUpont 2-5416
P. O. Box 1219
Denton, Texas

Operates in Any Mounting Position

Top Mounted

Bottom Mounted

End Mounted



No. 7550C 1/2" NPT (Male) Inlet to NPT (Fem.) Outlet. Closing flow as prescribed 24 gpm of LP Gas.
No. 7572C 1/2" NPT (Male) Inlet to NPT (Fem.) Outlet. Closing flow as prescribed 48 gpm of LP Gas.

convenient, safe, liquid withdrawal with

REGO[®] CHEK-LOK[®]

excess flow valves PATENTED

Economical RegO Chek-Loks are specially designed excess-flow valves with the check in a closed position and the outlet plugged. They may be top, bottom or end mounted, and provide the quickest and most convenient low-cost method of connecting to the tank for liquid transfer and evacuation with complete protection against liquid or vapor losses in the event of line breakage.

A new high capacity RegO 7550 liquid transfer valve has been developed especially for use with RegO Chek-Loks.

Fitting the transfer valve with a RegO 7572C-14 adapter permits quick, positive connection to the Chek-Lok against a gasket, and automatically provides full opening of the check for adequate flow capacity.

By installing RegO Chek-Loks on all your tanks, and making the high-capacity 7550 valve and adapter standard equipment on every service and delivery truck, you eliminate the need for separate transfer valves at each tank... a substantial saving without sacrificing safety!

here's how CHEK-LOK works:



DO YOU KNOW
It will pay you
dividends to join!

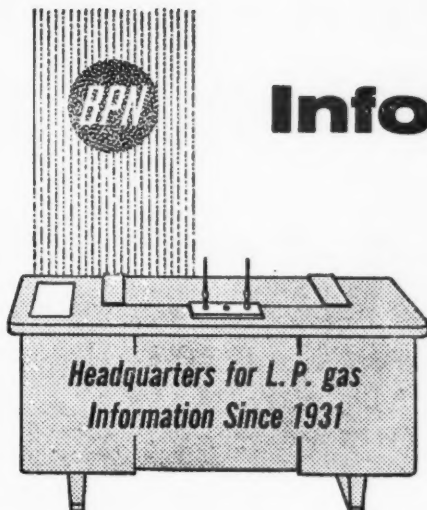


write for complete information

The **BASTIAN-BLESSING** Company

4201 West Peterson Avenue, Chicago 46, Illinois

BUTANE-PROPANE News



Information Desk

Removal of snow on scale platform with infra-red heaters . . . LPG burners prevent freeze-ups on railroad switches . . . Electric people claim 100 per cent efficiency . . . LPG liquid meters automatically correct gallonage

Snow removal problem

Illinois

I have a project for snow removal on an outdoor weight scale platform in service at present. The platform is 10 ft wide by 50 ft long and the pit is five ft deep.

Please give me any information that is practical, with infra-red heaters or any other idea that may be in use.

The platform is concrete.

J. T.

We have no information about snow removal from scale platforms. Infra-red heaters have been used for snow removal in other types of service and seem applicable for scale platforms.

We suggest you write to Perfection Industries Div., The Hupp Corporation, 1135 Ivanhoe Rd., Cleveland 10, Ohio. They may have applied their radiant burners to a similar job. They will give you information, and guarantee that the application will work on the scale platform you have in mind.—Ed.

Gas-electricity comparisons

Alabama

Please mail us a comparison between Btu per gal. of propane gas and kwh of electricity. Also, a comparison between heating efficiency of propane and electricity.

The best electric rate in our territory is .01 per kwh.

J. M.

A kwh of electricity is equivalent to 3412 Btu of LPG. The electric people will claim 100 per cent efficiency in their heating if it is done by heating elements and blowers. This is doubtful, although actual efficiency will probably be above 95 per cent,

so we'll let them have their 100 per cent.

The minimum acceptable efficiency for gas-fired heating appliances is 70 per cent and most units will do 75 per cent or better.

One gal. of propane contains about 91,300 Btu and 70 per cent of this is 63,910 Btu which will reach the room. Then it will require 63,910 divided by 3412 or 18.6 kw to equal the one gal. of propane. This is giving electricity every advantage in efficiency. At 75 per cent efficiency for gas-fired appliances it will take 20 kw to replace one gal.—Ed.

New liquid meters do the figure work

Michigan

As I am about to start bulk truck deliveries, I need to know more about correction factors. We are going to use the print meter gallon delivery system.

Also I would like data on how to determine the correction figures when a large transport truck is unloaded. (I know it's done by temperature correction figures but want to know how to figure them.)

Is it possible to get all the liquid from an 8000-gal. transport truck if the truck is sitting level or allowing for the liquid to run to low spot where the gas is removed from the bottom of the tank?

C. M. M.

We assume your bulk deliveries will be made through a meter since you mention the printed meter gallon delivery system. There are now liquid L. P. gas meters available which automatically correct the gallonage metered to 60 deg. F. and show them as such on the register. See your meter supplier or the advertisements in our magazine.

There are temperature correction tables with information on their use in the Handbook BUTANE-PROPANE Gases. See Chapter Three of Part Two starting on page 50. Copies of "NGAA Standard Factors for Volume Correction and Specific Gravity Conversion of Liquefied Petroleum Gases" may be obtained directly from the Natural Gasoline Association of America, 421 Kennedy Bldg., Tulsa, Okla.

All the liquid can be removed from a properly constructed tank truck if the truck is unloaded on a level pad. If the outlet is at one end, unload the vehicle on a level or slightly sloping area which will place the tank outlet at the low end of the tank.—Ed.

LPG good for switch heating

Indiana

We have an inquiry from a railroad on using propane to prevent freeze-ups on their switches. We have no information on this equipment. Can you give us the manufacturer and any experience of railroads or propane suppliers that are servicing this application?

There could also be some use for propane to remove snow, if equipment has been engineered.

No doubt some supplier would also have weed and grass burning equipment for railroad application.

C. W. L.

Many railroads are using L. P. gas-fueled burners to keep switches free of ice and snow.

An article in the March 1957 issue of BUTANE-PROPANE News, page 57, describes the equipment and methods used by one railroad company.

We believe the B & M Railroad will be happy to tell your prospect the details of its system.—Ed.

KEEP YOUR CYLINDER CUSTOMERS SATISFIED WITH...

King-Size Remote Indicator



"Just a glance tells me when I'm using the reserve cylinder"

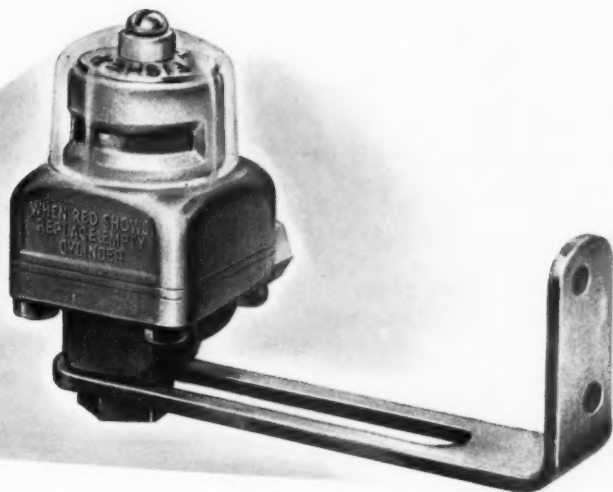


Cylinder service is a customer-satisfying cinch with this outstanding combination of a truly "easy-to-see" remote indicator, that mounts in full view at the kitchen window — PLUS completely automatic changeover from supply cylinder to reserve.

Write today for complete details.

and Automatic Changeover!

Big Remote Indicator



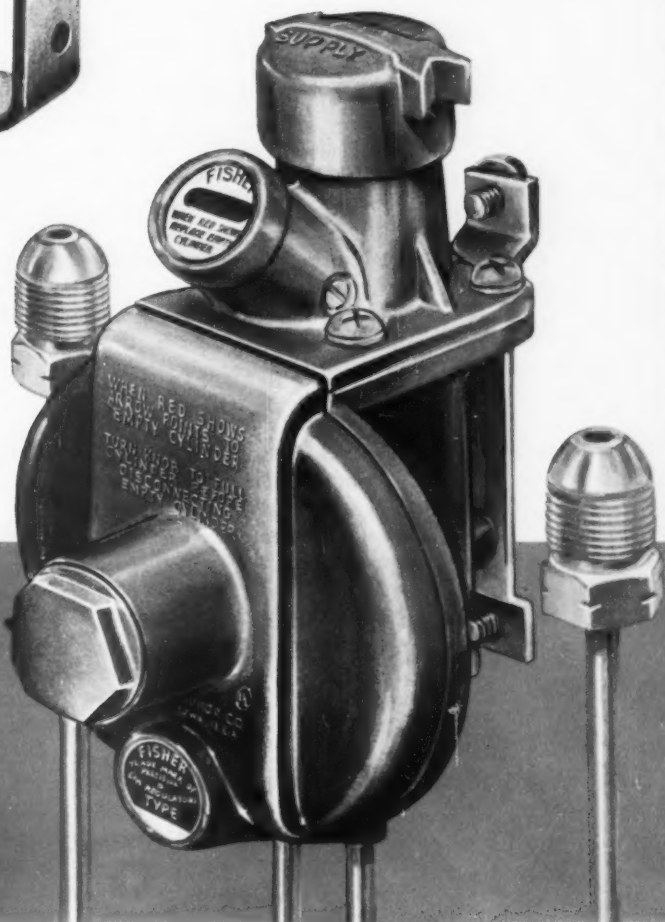
FISHER

Series
965B

AUTOMATIC REGULATOR

With the Fisher Type 965B regulator installed, multiple cylinder systems operate themselves. Changeover from supply to reserve cylinder is automatic. Customers don't have to do a thing. Continuous service and constant pressure are assured, even during cylinder changes. The built-in indicator on all 965B regulators also tells when supply is exhausted and reserve cylinder is in use.

Here's a remote indicator that puts a quick end to customer complaints. This king-size unit can be seen from clear across the room—or across two rooms for that matter. Just a glance tells your customer, and you, when the supply cylinder needs replacing. Indicator provides 360° visibility, is weatherproof, and comes complete with 10 feet of tubing, fittings and window mounting bracket.



IF IT FLOWS THROUGH PIPE ANYWHERE IN THE WORLD...CHANCES ARE IT'S CONTROLLED BY...

FISHER GOVERNOR COMPANY

Marshalltown, Iowa / Woodstock, Ontario / Rochester, England

BUTTERFLY VALVE DIVISION: CONTINENTAL EQUIPMENT CO., CORAOPOLIS, PA.



SINCE 1880



WASHINGTON REPORT

by NEIL REGEIMBAL, *Washington Editor*

★ "Soaring sixties" sail into mild-recession clouds

The nation is going through a mild economic recession. Hurting most are some major industries: steel, auto, housing, and some defense industries. Others are not feeling the pinch—consumer spending generally holding up well. Government economists hope for another boomlet by late this year. Easier money and credit and a defense spending spurt should help recovery.

★ Fuel industries' men may be recruited for national emergency

Government civil defense planners have a new program to mobilize the fuel and energy industries in case of any national emergency, ranging from extreme international tension to a nuclear attack. Recruited executives from fuel companies would take over as "emergency management." (Details on page 74.)

★ Supreme Court rules on price discrimination

Charging different prices to different buyers—even in different parts of the country—is price discrimination, the U. S. Supreme Court says. But price discrimination is only illegal if injury results, the court recently ruled. And even so, a seller can defend himself by showing that the price differences were made "in good faith to meet the lower price of a competitor."

★ Court vetoes broker-buyer commission split

The U. S. Supreme Court has broadened the Federal Trade Commission's power to curb price discrimination between large and small customers. The court ruled that a broker hired by a seller can't pass along part of his commission to the buyer to effect a price cut. Any discounts must be proportionately equal (based on volume or some other normal standard) and available to all buyers.

★ FTC goes after unfair local retail competition

The FTC drive to end unfair competition is now moving against strictly local retail operations. Advertisements which cross state lines in newspapers are the basis of the effort to expand enforcement. The case involves a New York department store, but will set national precedents.

★ Deduction limited on items used less than actual life

On the last day before its summer adjournment, the Supreme Court limited the deduction for depreciation taxpayers may claim on equipment used for less than its actual physical life. Settling a conflict among lower courts in favor of the government rather than the taxpayer, it defined the "useful life" of a depreciable item as its period of actual use, not its physical life.

★ National driver clearance listing passed

All drivers will be subject to a national driver clearance program passed by Congress before its adjournment. A list of drivers who have lost their license due to drunken driving or manslaughter convictions—and of commercial drivers convicted of major traffic violations—will be given to state licensing authorities, if the President signs the bill.

★ Congress authorizes smog study

A two-year study of the medical effects of car and truck exhaust gases on humans has been voted by Congress. The first step in what may eventually be a federal smog-control law, it may spur use of L. P. gas. The study will be conducted by the U. S. Public Health Service.

Your bankbook proves
American Metered Service
helps build sales...
cuts costs



LP-Gas meters bring utility-type service to your customers, build confidence in gas and gas appliances. That's one reason so many industry leaders capitalize on the load-building ability of American metered service. They also appreciate the operating economies possible with metered service... buy more gas when rates are low by using increased storage on consumers' premises... no revenue loss from "dump gas" sales by competitors... sliding rate schedule with minimum charge... no more costly cross-hauling or out-of-fuel calls.

Ask your American representative to detail the many ways an investment in metered LP-Gas service builds sales, cuts costs and increases profits.

WC-45-LPG Welded Steelcase

Light weight, sturdy, economical... ideal for average domestic service without central heating. Features removable soldered top and internal, counter-type index. Rated capacity 45 cfm propane at 1/2-inch w.c. differential - 5 psi working pressure - 1/2-inch FPT connections - shipping weight 8 lbs.



AMERICAN[®]
METER COMPANY
INCORPORATED (ESTABLISHED 1936)



GENERAL SALES OFFICE: Philadelphia 16, Penna. • Albany • Alhambra • Atlanta • Baltimore • Birmingham • Boston • Chicago • Dallas • Denver • Erie • Houston
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IN CANADA: Canadian Meter Company, Ltd., Milton, Ontario • Calgary • Edmonton • Montreal • Regina • Vancouver

SUPPLIERS TO THE GAS INDUSTRY for Ironcase, Tinned Steelcase, Aluminumcase, and Welded Steelcase Meters • American-Westcott Orifice Meters • Instruments
Reliance Regulators • Apparatus • Valves

Brand New...and the Best Yet!

RIGID FLARING TOOLS



Don't take our word for it—try a new **RIGID** Flaring Tool! See if you don't get smoother, stronger, more uniform flares . . . in less time and with less effort than ever before!

Then, compare this new **RIGID** Flaring Tool, feature-by-feature, with any flaring tool you've ever seen or owned:

- Feed releases automatically when flare is fully formed.
- Reversing feed screw burnishes flare.
- Hardened steel die bars

- are precision-machined.
- Large, comfort-grip feed screw handle turns easily.
- Precision-ground, hardened steel flaring cone, eccentrically mounted in precision bearings, produces rolling action for even metal flow . . . gives uniform flare walls without galling.
- Tubing hole sizes are clearly marked.
- Easy sliding rugged malleable yoke serves as stop for tubing to give correct flare size.
- Yoke clamp screw fits into centering hole . . . locks bars, yoke and tubing into perfect alignment.
- Stop pins keep yoke on die bars at all times . . . yoke can't slide off.

3
Models:

RIGID No. 457 for 45° flares, 1/8" to 3/8" O.D. (7 sizes)
RIGID No. 459 for 45° flares, 1/8" to 3/4" O.D. (9 sizes)
RIGID No. 376 for 37° flares, 3/8" to 1/2" O.D. (6 sizes)

See and try these new **RIGID** Flaring Tools. Your Supply House has them.

RIGID Work-Saver Pipe Tools

RIGID

The Ridge Tool Company, Elyria, Ohio, U.S.A.

CALENDAR

All associations
are invited to send
in the dates of their
forthcoming meetings

1960

August 7-9—New Mexico Convention and Trade Show—Albuquerque, N. M.

August 14-16—Kentucky LPGA Convention—Kentucky Hotel, Louisville, Ky.

August 21-23—Idaho, Nevada, Utah Tri-state Convention and Trade Show—Shore Lodge, McCall, Idaho.

September 11-13—Florida LPGA Annual Convention—Hotel Robert Meyer, Jacksonville, Fla.

September 12-13—North Carolina LPGA Annual Meeting—Sir Walter Hotel, Raleigh, N. C.

September 13—Pennsylvania LPGA Annual Convention—Holiday Motor Hotel, Mechanicsburg, Pa.

September 16-17—Wisconsin LPGA Fall Convention, Maxwellton Braas Country Resort, Bailey's Harbor, Wisc.

September 18-19—Virginia LPGA Annual Convention—John Marshall Hotel, Richmond, Va.

September 21-23—PCGA Annual Meeting—Westward Ho Hotel, Phoenix, Ariz.

September 23-24—Iowa LPGA Convention—The New Inn, Lake Okoboji, Iowa.

October 10-12—American Gas Association Annual Convention—Atlantic City, N. J.

October 11-12—Northeast LPGA Convention—Ambassador Hotel, Atlantic City, N. J.

October 11-15—North Carolina State Fair—Raleigh, N. C.

October 17-21—48th Annual National Safety Congress, Sessions on industrial safety scheduled for the Conrad-Hilton, Pick-Congress, Sheraton Towers, Morrison and LaSalle Hotels; traffic safety, Pick-Congress; commercial vehicle and transit safety, La Salle; farm safety, Palmer House; and school and college safety, Hamilton, Chicago, Ill.

December 5-9—AGA Gas Air Conditioning Sales School—Nationwide Inn, Columbus, Ohio.

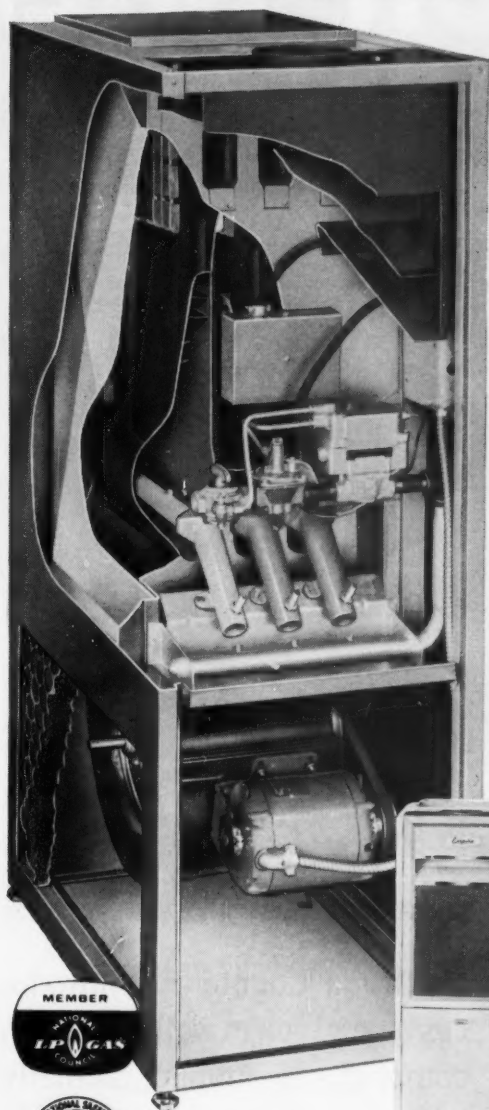
1961

February 13-16—American Society of Heating Refrigerating and Air Conditioning Engineers, Inc.—Semi Annual Meeting and Exposition, Chicago, Ill.

April 13-15—Western Liquid Gas Association Convention and Trade Show—Hotel El Dorado, Sacramento, Cal.

BUTANE-PROPANE News

EMPIRE GAS WINTER AIR CONDITIONERS



have more *Quality* features

EMPIRE FEATURES	ADVANTAGES	COMPARE EMPIRE TO ANY OTHER BRAND
ONLY 50" HIGH	Lowest High-Boy. Fits anywhere.	
MORE HEAT TRANSFER SURFACE	Outer fins transfer more heat, saves gas.	
WAFFER TYPE COMBUSTION CHAMBER	Anti-resonant. Less wasted fuel.	
"VACUUM BOTTLE" CONSTRUCTION	Double wrap-around casings.	
SUPER-SILENT GAS VALVE	Automatic.	
CAST IRON BURNER	Non-corroding stainless steel ribbon ports.	
FLEXIBLE PILOT REGULATION	Easily switched from 100% regulated to non-regulated.	
ADJUSTABLE BLOWER ON-OFF CONTROL	Use for summer air circulation.	
OVERSIZE FILTERS	Standard equipment. Easily cleaned.	
EASY TO SERVICE FROM FRONT	All components accessible.	
LEVELING BOLTS	Easily adjusts. Prevents rust-out.	

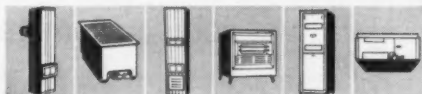


MAIL THIS COUPON TODAY!

EMPIRE STOVE COMPANY
Belleville, Illinois

QUICK! Send more details on
Winter Air Conditioners.

NAME _____
DEALER NAME _____
ADDRESS _____
CITY _____ ZONE _____
STATE _____



Empire

Manufacturers of the finest
complete line of Certified
Gas heating appliances

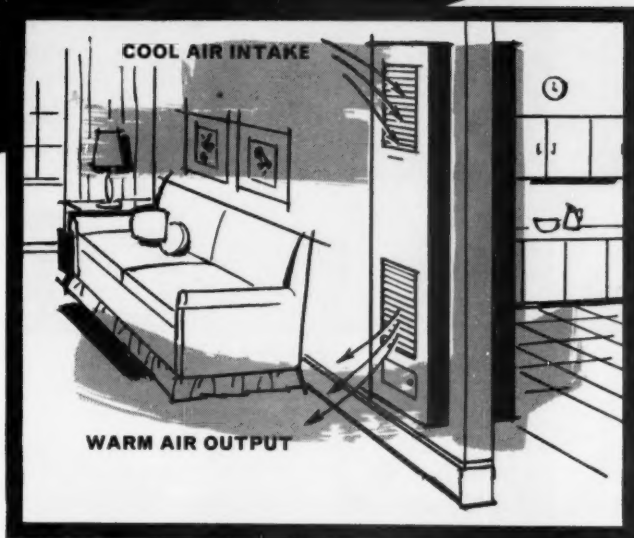
INSURE YOUR WALL

The New Look in Suburban Counter-Flo wall heaters gives you more satisfied customers and adds to your good reputation



Suburban Counter-Flo introduces a new look in wall heaters... compact, streamlined...actually adds beauty to any room. It's like money in the bank because your customers will talk, and this leads to more and more jobs—insures more and more profit.

HEATER PROFITS!



Counter-Flo heats floors FIRST

Suburban Counter-Flo draws cool air in at the top, forces warm air out at the bottom, thus warming the floors first and creating near-perfect room temperature from top to bot-

tom due to superior air circulation. Fan is located in the top, and the motor is permanently sealed — an integral part of the wall heater.



Single and Dual-Wall models

As a Suburban dealer you can offer your customers their choice of gravity or forced-air wall heaters — single or dual wall — from 18,000 to 50,000 BTU — plus gas-fired fully automatic floor furnaces at the right price.

LP Dealerships Open

With Suburban you get: (1) superior design and looks, (2) exclusive Counter-Flo comfort, (3) 20-year guaranteed combustion chamber, (4) a complete line and (5) free displays and merchandising aids. Get the full story from your Suburban distributor today.

suburban®

Built-Ins

Wall Heaters • Floor Furnaces • Ranges

Samuel Stamping & Enameling Co.
Dept. BP— Chattanooga, Tennessee

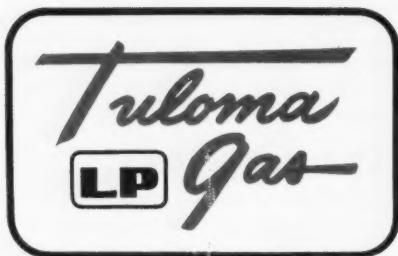
Yes, I would like more facts on Suburban wall heaters and floor furnaces. At no obligation:

- ☐ Please send representative
☐ Please send literature

Name _____

Address _____

City _____ State _____



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ANOTHER FIRST FOR TULOMA

AUTOMATIC BILLING: The first of its kind ever used . . . an automatic business machine combination that types 100 words per minute, adds, subtracts, keeps records, tabulates, and computes . . . all in one operation. Another first from Tuloma!

This new machine will save Tuloma over 2,000 man hours per year and will help us provide even better service.

Machine accounting is another step in Tuloma's all-out expansion . . . expansion in efficiency,

progress, and service for the dynamic LP-Gas industry. Take Tuloma . . . and Grow!

DISTRICT OFFICES: Williamsburg, Virginia; Casper, Wyoming; Salt Lake City, Utah; Des Moines, Iowa; Ulysses, Kansas; Houston, Texas; Midland, Texas; El Dorado, Arkansas; Montgomery, Alabama.

TULOMA GAS PRODUCTS COMPANY

PAN AMERICAN BUILDING • PHONE LUther 2-3261
 TULSA, OKLAHOMA

Beyond the Mains

By WILLIAM W. CLARK • Editor



Do you buy . . . or are you sold?

After some 14 years around the gas and L. P. gas patches, the plaintive cries about the low estate to which appliance salesmanship has fallen have a mighty familiar ring. Every time someone rises to deplore the lack of selling in today's market, it seems to us we've heard that song before—over and over again.

But the fact that the theme is repeated so often must be proof that it bears repeating. The utter lack of salesmanship at the retail level is certainly a major reason why appliances are not moving as they should. Ask yourself: What have I actually been *sold* in the past 10 years? If you're like many of us, you've *bought* practically everything you laid out your dollars for. Nobody has actually *sold* you anything.

To this charge, the salesman has a ready rebuttal. Nobody's interested in anything but price, he cries. How can you sell to people like that?

Well, the shoe fits. When you've gone out to buy something, sure you looked for the lowest priced item. After all, if no one bothers to explain the difference between the cheaper item and the more expensive, the only difference the buyer will see is the price. Why, then, pay more?

Along this line, we'd like to quote from a talk given recently by Norge president Robert H. Quayle Jr. Mr. Quayle posed the disturbing puzzler: Why, when personal income set a new high in May, were appliance (specifically refrigerator and washer) sales down for the first five months?

"The appliance business has lost its share of the consumer dollar again," he concludes.

What's the basic reason for this situation? Mr. Quayle believes it is that an appliance is now treated by retailers throughout the country as a commodity instead of an item requiring specialty selling.

"The retail effort has become more and more concentrated on lower prices," he said. "It's less and less a question of how to best serve the consumer. As a result, there is less stimulation of consumer interest, with the resulting lack of consumer desire to buy and own more and better labor-saving appliances.

"The president of one large-volume appliance retail operation took great pride in reporting the other day that he paid his salesmen \$1.25 an hour . . . that his salesmen were told not to disturb the customer in selecting merchandise, but were there merely to answer technical questions concerning the features of the various products.

"He went on to say that his operation delivered appliances to customers at a \$20 to \$60 saving. He pointed out that he was confident he had made an important contribution to their economic welfare.

"I think many of us would take the opposite view—that good selling is not economic waste any more than is good advertising—that good selling instead permits a customer to make an informed decision, one that will bring satisfaction and pleasure from the purchase of an appliance.

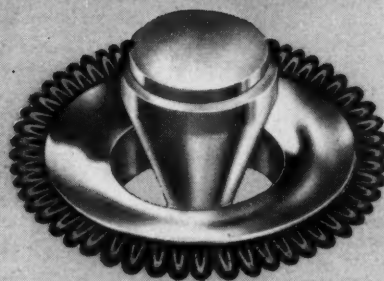
"However, because of the philosophy of fast sales (volume sales with flat-rate sales costs instead of incentive compensation), the competitive situation price-wise has become increasingly difficult. The margins that permit time for good selling and good service have been removed and, because of this, the appliance business finds itself stymied by a lack of aggressive merchandising . . . a lack of feature demonstrations and face-to-face selling.

"It is obvious that the appliance manufacturer's share of the consumer dollar will continue to shrink as long as we are forced to wait for customers to come in and look at a long row of white appliances, examine the price tags, and select the cheapest."

HOP-A-LONG HARPER...the Gold Star Ranger...sez:

"Jine the Gold Star Posse...trackin' down

MORE GAS RANGE SALES"



**"Shore as shootin'
you'll round up more sales when
yore ranges are saddled-up with**

UNI-MATIC®

Flame Selector *THE BURNER
WITH A BRAIN***

Send for FREE 20-page
UNI-MATIC Demonstration
Manual. Contains five simple,
sale-closing demonstrations.



"Pod'ner, yore prospect is just about hog-tied when you tell about the advantages of the FLAME SELECTOR UNI-MATIC. Thar's nothin' better on any range. But remember...seein' is believin'. And when it comes to corrallin' the actual sale, you jist cain't beat a demonstration. Yessiree, the Harper UNI-MATIC heat controlled burner gives you a bonanza of benefits to offer. Demonstrate 'em right...and you cain't go wrong."

*A. G. A. Mark © Am. Gas Assoc., Inc.



UNI-MATIC Flame Selector meets the basic specifications for AGA "Gold Star Ranges."



HARPER-WYMAN COMPANY

Specialists in Burners and Controls for Domestic Gas Appliances

Dept. 80-B / 8550 Vincennes Ave., Chicago 20, Illinois

How to build safety into a transport



The critical items are valves and piping—types, placement and protection.

CASEY JARVIS • Jarco Engineering, Corona del Mar, Cal.

SINCE its introduction in 1953, the blimp transport has grown in customer acceptance to the point where it is a standard item in the industry. Today, you can almost buy it out of a catalog—for almost immediate delivery.

The big reason for the blimp's popularity is summed up in one word: **payload**. Its shape, when combined with T-1 steel, has stepped up payload, putting extra dollars into dealers' pockets.

But, hand in hand with economy must go safety. In the transporting of LPG, you have a legal and moral responsibility to your company, and to the entire industry (because of its work in promoting the acceptance of the product) to do everything possible to make transports safe.

In the transporting of the product, you are more susceptible to catastrophe than in any other phase of your operations. Each unit is on the move for just as many hours as the efficiency of your dispatching procedures will allow. It has a high degree of "exposure" to accident. It's driven at

all speeds, from very slow to fast. It's in the worst weather that you are using it most: in rain, at night, and on icy pavement. Accidents will happen. Prepare for them. Know that you have taken every precaution in specifying the truck's design. Educate your drivers on the correct operation of all valves, and on procedures if an accident should occur.

In designing for safety, the most important elements are the valves and piping design. The tank design is a less critical problem. But let's start with it, nevertheless.

Although the tank is by far the

largest and most expensive of the fuel delivery devices, it causes us the least worry about safety. This seems incongruous, since it is a container carrying possibly 10,000 gal. of propane, but the codes under which these vessels are made require generous safety factors that assure a very strong tank.

ICC specification MC 330 covers the design and construction of steel cargo tanks. It requires that the vessel be fabricated in accordance with the ASME Code, generally the 1959 edition. The code interpretation varies slightly among fabricators, as do the inspection requirements of the va-

Casey Jarvis, the author of this article, formed Jarco Engineering, Corona del Mar, Cal., last year. (See **BUTANE-PROPANE News**, September, 1959, page 68.) Through his new company, Jarvis has designed advanced methods for safe handling and engineering of transportation and storage equipment. Formerly, he was sales manager for Superior Tank & Construction Co., where he started a transport tank division in 1947.



Operation, safety and cost most vital factors in valves and piping analysis

rious agencies charged with responsibility of testing and releasing the vessels for service. So any tank with an ASME Code label on it should be considered safe, as far as the tank alone is concerned. This refers to the construction of the tank, heads, shell, and welding. It does not necessarily guarantee that the entire transport unit is as safe as you want it to be.

The greatest potential danger to the tank itself is through impact in an accident. We all can recall examples of such accidents. The paint is scratched, the heads are dented, the shell is flattened, but the tank does not rupture and no product escapes.

When vessels do rupture, it is because they have been subjected to fire at localized positions on the tank. If the fire is fed by leaking gas, it is because a valve or piping gave way. The real potential sources of danger and possible catastrophe then are the valves and piping.

ICC specification MC 330 states that the fittings and valves should be "adequately protected" by a housing. NFPA Pamphlet 58 requires the valves to be "safeguarded against physical damage." These regulations once again allow interpretation, so are no absolute guarantee of safety.

In analyzing valves and piping design, you should figure on three factors: operation, safety and cost.

1) **OPERATION.** You want to be able to load and unload your unit as fast as possible. Time costs you dollars, so you not only want to use large valves and piping to accomplish speedy transfer, you want to use valves that will give you a minimum of maintenance problems, so that your transport is not tied up because of a 50-cent replacement item on a particular valve.

2) **SAFETY.** Here is the big item, the one you should be most concerned with. You will want to make sure that you have done everything possible to avert a

catastrophe. Such a thing is highly unlikely in our industry, but we must continually strive to eliminate every condition that might permit it to happen.

There are two potentially hazardous conditions in the operation of a transport. One is when you are loading or unloading. The other is when you are traveling on the highway. It is only when the product becomes uncontrolled and escapes the container or the piping that we have a potential dangerous situation. This fact should be kept in mind, and the safety design should be based on always having the product under control, with the least possible chance of exposure to atmosphere.

Safety runs hand-in-hand with the desire for continuing operation. Your transport does not make you any money standing still, and it is standing still if valves and piping are being repaired through damage in an accident, even though there may have been no serious consequences.

3) **cost.** You will note that the word "cost" is in lower case letters. That's how I think it should be regarded in relation to the two other factors. Granted, smaller sized valves and piping are less expensive than larger sizes, but they won't transfer as much product, and the time factor, identified with high labor wages, is much more important to you than a few dollars savings in the initial purchase of too-small valves and fittings. There should be no compromises with safety, for with the use of a less costly design, you may very well be sacrificing just the protection your unit would require to prevent a serious fire.

Regarding a safe design, let's review the connections and fittings in the tank. Keep in mind that this unit might be involved in a moving accident at some time in the future.

1) Safety relief valves

These valves are installed to protect the tank from rupturing

due to an increase in internal pressure. Because of its design, there is no control of the valve, no handle to shut it off in case it should malfunction, or be hit in an accident. By all means, this valve should be installed in a recess within the shell of the vessel so that it could not possibly be hit in an accident. A rain cap should be placed over the recess to protect the valve from the weather.

Yes, it is less expensive to put a guard around the relief valve rather than recess it, particularly in a T-1 tank where the fabrication requirements are more stringent than with other steels, but I don't think a housing can be designed to withstand the shearing or smashing force of a 60,000-lb trailer moving at 60 mph. If it could be designed, it would cost more than a recess, and it would weigh considerably more, thereby sacrificing some precious payload.

Our experience has shown that the tank is immeasurably strong. It should be used to protect this fitting.

2) Rotary gauge

This assembly should also be housed in a recess, for the same reason as the safety valve. If it can't be reached to be hit, it can't be damaged or knocked off to allow the LPG to become uncontrolled.

3) Miscellaneous fittings

The other small openings in the tank for the outages and pressure gauge should also be recessed. Granted, these openings are only 1/4 in.; however, with 200-lb pressure pushing behind them, a definite danger would be present if they were sheared. Because of their small size, the cost of recessing them is insignificant. Most certainly, the thermometer should be set in a well, rather than directly into the tank.

4) The liquid line

Almost all fabricators locate this tank outlet in the rear bottom of the tank for good drainage, plus protection by the trailer subframe.

This steel subframe, because of its size and thickness, should do the job of protecting the fitting that screws directly into the tank,

but what of the rest of the valves and piping? As they must extend beyond the subframe for operation, they are susceptible to impact damage. In case of an accident, they may prove useless. Therefore, they cannot be considered as the main shut-off valves for the tank. The excess flow will do the job for which it was designed, but that is not adequate for an LPG transport.

Therefore, I prescribe an internal valve instead of an excess flow valve, screwed directly into the tank, spring loaded, so that in its normal state it is closed. Doesn't it make better sense to run down the highway with the product contained within the vessel itself, rather than by a shut-off valve as much as four feet away from a not so positive acting excess flow valve? Naturally, with the internal valve, another valve should be used for positive shut-off.



Here are two more advantages to internal valves. With them, you are required to install a remote control mechanism away from the loading connections. Should a hose break during unloading, this remote control could be reached with probably little or no danger to the driver. A fusible section installed in this linkage is the second advantage. Should escaping product ignite during the loading or unloading operation, the fusible section would melt, allowing the spring to close the valve.

Operationally, there is yet another feature to an internal valve—faster flow. Because there is no excess flow mechanism, there is no chance for a closure due to slugging in the line.

In 1959, two manufacturers introduced internal valves that also had excess flow valve features built into them. These valves offer the advantages of both methods of safe closure.

On transports that use a spray filling line, the valve in the tank outlet should be nothing but a back check. You are only filling here, and the safest, most eco-

nomical valve would be the back check.

5) The vapor line

I've commented on the internal valve at some length, and for the ultimate in safety, this valve should be used on both liquid and vapor lines. I can think of no operators who are now using the internal valve on vapor lines, but a 1¼- to 2-in. line can cause as much trouble as the liquid line if it is severed in an accident. Internal pressure could force liquid through the interior pipe. In case of an accident, the chances are high that the trailer tank would overturn, and the vapor pipe would suddenly become a liquid connection. Too little attention has been paid to this connection.

Here, too, there would be a definite operational gain, for the large refinery pumps often push liquid into the transport at such a rate that the excess flow valve on the vapor system cannot cope with these surges, and they slam shut.

In the last year or so, some operators in the West who are using truck and four-wheel trailer tanks have been requesting that the liquid and vapor lines be partially recessed, and completely enclosed by the front subframe or pedestal of the trailer tank. This is a further step in a continuing attempt to design for safety.

Each of these recommendations would increase the cost of an LPG transport slightly. The internal valve with its linkage is more expensive than an excess flow valve, and recessed reliefs and rotary gauges run up the cost of fabricating a tank, but these costs should not add \$150 to the price. Compare this to the total investment for an LPG unit, truck included, of from \$25,000 to \$45,000, depending on the area. By this small additional cost, you are strengthening the weakest link in your unit. The valves and piping are the most likely source of danger in an accident, or even in loading or unloading.

In your desire to buy at the lowest price, and to achieve the maximum payload, don't compromise with safety. Go beyond the code requirements, take advantage of the devices that will give your equipment and you the most protection! ■

Dealers stem tide of natural gas in Florida

"The economic advantages of changeover from manufactured gas or L.P. gas to natural gas (in Florida) have not been as clear cut as in some other parts of the country," reads an AGA report issued in June. "L.P. gas dealers are continuing to fight for business."

The following are excerpts from the report, issued one year after natural gas made its debut in the Sunshine State:

AN upsurge in the battle of business vs. government in gas will come when the FPC issues its decision in the Houston Corp.'s Docket G-18,338. This application for \$18,750,000 in new pipeline facilities will permit the connection of many new Florida communities.

Economics is a prime factor in the seesaw competition for the gas business in Florida. Prior to the entrance of natural gas a year ago, the Florida market was pretty well defined between a few established manufactured gas utilities and a number of substantial L. P. gas dealers covering rural areas, new developments, and some resort areas.

Since the Houston Corp.'s pipelines represent the newest major facility in the country with high-cost mileage and average high-cost gas, the economic advantages of this changeover have not been as clear cut as in some other parts of the country.

This has meant:

1) L. P. gas dealers are continuing to fight for business in areas that have or will have piped distribution.

2) The changeover from manufactured gas is not unanimous.

3) Several communities that planned municipal operations are now taking a long, hard, second look at the feasibility studies of the engineers who sold them the original proposals.

The towns of Graceville and Lake Alfred decided they were not going to build new systems.



This is PTI

Modern design and tight control over preventive maintenance help Producers Transport Inc. to keep its ranking as the world's largest L.P. gas common carrier transporter

WILLIAM W. CLARK • Editor

IT takes a combination of low costs and fast service for a company to achieve the ranking of world's largest highway transporter of LPG.

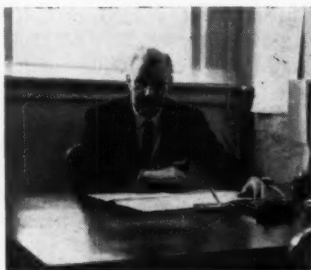
Producers Transport Inc. claims that distinction. Operating out of New Buffalo, Mich., a tiny village just across Lake Michigan from Chicago, PTI has in its fleet more than 50 LPG transports.

The fleet it puts on the road today is only a year old. All but two of the vehicles are blimps. It is maintaining low costs and fast service through a combination of design (which provides maximum payload, fast loading, and fast unloading in the future) and top-flight preventive maintenance on both trailers and tractor units.

PTI vehicles roam over a spread-out territory which extends, roughly, over a 300-mile radius from terminals at Tuscola and Kankakee, Ill. Included are the states of Michigan, Indiana, Illinois, Ohio,

and Wisconsin. It is also authorized by ICC (PTI is a common carrier) to haul into Iowa.

It also hauls for the largest companies: Phillips, from Kankakee, Tuscola, and East Chicago, Ind.; Natural Petrochemical Co., from Tuscola; Clark Oil and Shell, from East Chicago; Warren Petroleum, from Blue Island, Ill.; Pure Oil, from Lockport, Ill., and Toledo, Ohio; and Cities Service, from East Chicago and South Bend.



John Peirick is manager of PTI's 50-plus fleet of LPG transports.

Operating at peak capacity in the winter time, it averages three loads per-vehicle-per-day, on an around-the-clock basis. An average long run is 300 miles, round trip, and a PTI vehicle is expected to complete that in a 12-hr shift. During the other half day, two shorter runs are usually made. At an average of 9100 gal. per run, each vehicle hauls better than 27,000 gal. per day at its peak. The peak extends from about October 15 to April 1.

The units get bigger every year, and the company is constantly searching for new ways to lighten the deadweight. Clean-bore tanks are now standard; so is T-1 steel, and so are plastic fenderettes. Today's fleet—that is, the trailers—is a year old. Thirty-seven of the tankers are over 10,500 wg capacity. One of these is 11,121, said by PTI officials to be the largest ever built. The remainder are 9100's, 8750's, and 8600's.

EXCLUSIVE

PTI runs a decentralized type of business. Each of its six terminals—one at New Buffalo, and others in Madison, Wis.; East Chicago, Ind.; and Tuscola, Paris, and Kankakee, Ill.—is operated by a broker, or lease operator. These men own their own tractors and function as private businessmen, but their operations are closely supervised from New Buffalo headquarters.

Typical of this control is the preventive maintenance program, discussed in detail below. Four of the terminals—Madison, Paris, Tuscola, and Kankakee—have their own maintenance shops. But preventive maintenance policies and schedules are set by the home office, complete sets of records are kept there, and the performance of inspections and service work is policed by New Buffalo, under direction of Jim Horton, who is in charge of maintenance.

Terminals that do not have their own facilities contract to have the maintenance done by other local shops.

This system of close supervision from the home office is now two years old, and has already begun to pay dividends in decreased maintenance costs. Previously, the terminals handled their own maintenance. But in the two years since the control system was put into effect, the cost, expressed as a percentage of gross revenue, has gradually been reduced. Last year it stood at 9.6 per cent; in the first quarter of this year it was off to 4.6 per cent, putting it at least a couple of percentage points below the national average. The cost curve is not consistently downward for every quarter, but the total effect is.

There are, to be sure, other factors involved. A lot of old equipment has been replaced in the past year or two, which naturally tended to shave maintenance costs. Also, since the greater the amount of gallonage hauled the lower the percentage will go, constantly growing loads have contributed. Nevertheless, this is probably typical of most operators in these times, so

the decrease is still to the credit of PTI.

It might be noted here that, since PTI is a common carrier operating under the rules of the Interstate Commerce Commission, certain preventive maintenance minimums are fixed by regulation. But PTI has gone the extra mile past these minimums; it has its own requirements which exceed the ICC regulations, and it is these requirements that are reflected in the improved PM cost records.

Also, PTI follows the manufacturers' PM recommendation religiously, but adds its own extra ounce of prevention. Its own procedures are based upon these recommendations—with that extra *plus*.

PTI also supervises operating procedures at each terminal, under policy directives. Again on the subject of preventive maintenance, John Peirick, manager in charge of the LPG division, urges that each terminal have one mechanic per five tractors. He also tried to hold terminal equipment and manpower to optimum size.

"We want no more than 15 units per terminal," he says. "At this size, the manager can be working manager, handling dispatching, maintenance control and direction.

"A small terminal won't be hit as hard by peaks and valleys in work load. We can keep a larger percentage of our personnel the year around."

Another example of centralized control is the trailer policy. PTI owns all the trailers, and they are built to the company's specifications.

Preventive Maintenance

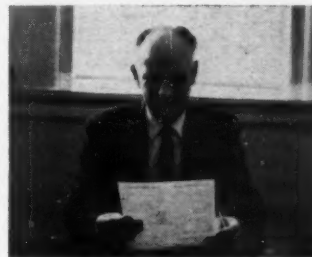
The entire preventive maintenance schedule is based on accumulated mileage, which is reported to the home office weekly. A supplemental check required by ICC is made on a time schedule. ICC asks for it quarterly; PTI, however, performs it every 30 days.

The periodic checkups are identified by letter code—B, C, D, E, F, and G. B checkup is the most basic of the group, being grease and lube. This is not assigned by the home office, but is expected to be done

every 2500 to 3000 miles, and the report of it must be sent in to New Buffalo when it is completed. There are 29 separate items to be checked on tractors, 14 on trailers.

For those units powered by diesel, an additional set of inspections is required. This is listed on the back of B inspection form.

B inspection is not an ICC requirement, nor are any records required to be kept, but the home



Jim Horton is in charge of maintenance for PTI's terminals.

office maintains them just the same—as a monitoring system to make sure the terminals are up to scratch on it.

Inspections C, D, and E are tractor inspections and F is a trailer inspection. C is done at 6000 miles, and covers 33 basic items. Inspection D, done every 18,000 miles, includes all the inspections called for in C, plus 19 additional ones. One item of particular importance here is the road test by the foreman. Inspection E comes at 54,000 miles, and includes everything listed under C and D inspections, plus 14 additional checks, giving a total of 66 checks all together. There are also special additional jobs for diesels in each of the three inspections.

For trailers, in addition to the B check (which is included with the tractor B check), two other inspections are required—F inspection every 30,000 miles and G every 90,000. F has 22 points and G, 28, but unlike the tractor checkups, G does not include all the points listed on F.

Every one of these inspections is

Forms used in scheduling preventive maintenance appear on the following two pages. Text continued on page 36.

PTI's preventive maintenance control

PRODUCERS TRANSPORT, INC.

"B" INSPECTION

TRACTOR # _____ MILEAGE _____ DATE _____ TRAILER # _____

LIST OF ITEMS TO BE LUBRICATED - ALSO ITEMS TO BE INSPECTED

	CHECK ITEMS COMPLETED	REMARKS ON ITEMS MISSING OR NO SERVICE
1. Oil change		
2. Filter change and service V & B filter screens		
3. Clean carburetor air filter pan and refill		
4. Clean filter housing		
5. Check radiator for leaks-anti freeze		
6. Check hoses for condition and leaks		
7. Check water pump and all water connections		
8. Check fan		
9. Check belts		
10. Lubricate generator		
11. Lubricate starter		
12. Lubricate distributor		
13. Lubricate oil clutch release bearing		
14. Lubricate front leaf linkage		
15. Check for leaks steer gear hose		
16. Lubricate spindles bolts		
17. Lubricate tie rod-drag link		
18. Lubricate spring shackles and pins		
19. Check spring center bolts and leaves		
20. Check oil level at transmission		
21. Check oil level at differentials		
22. Check breather vents on differentials and power divider		
23. Check battery terminals and water level		
24. Fill brake master cylinder		
25. Lubricate 5th wheel and check spring		
26. Lubricate door hinges and roller plates		
27. Wash unit		
28. Adjust brakes		
29. Check and adjust emergency brakes		

TRAILER #

Mechanic's Initials _____

1. Lubricate tandem assemblies	
2. Lubricate gear boxes	
3. Lubricate brake shafts and pins	
4. Lubricate knife and hinges on safety valve box	
5. Inspect all springs and center bolts	
6. Check all lights-tractor and trailer	
7. Check oil step light-tractor and trailer	
8. Check all tires for wear and matching-remove foreign matter and fill holes with rubber	
9. Check all tire pressures	
10. Check grounding cable	
11. Check drag strap	
12. Inspect mud flaps	
13. Wash unit	
14. Adjust brakes	

Mechanic's Initials _____

PRODUCERS TRANSPORT, INC. **TRACTOR INSPECTIONS "C", "D", AND "H"**

Terminal _____	Date _____	Unit # _____ H#Range _____
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Repairs must be listed each time on completed.

NOTE: Reverse side for Diesel Engine Service

List all items to inspect, adjust and replace

"C" Inspection - 6,000 miles

- Adjusting valve clearance—(25 hot (accept V-8))
- Check spark plug leads and cap
- Check points, oil, camshaft
- Check distributor cap, ignition wiring
- Lubricate distributor cap, set cam angle
- Check timing, use light
- Check fuel pump pressure (#3 min.)
- Check engine oil level, general
- Test generator and voltage fan, report oil breather leaks
- Check fan and compressor belts
- Check generator brushes, commutator and slip brushes
- Check condenser ventilation valve
- Check carburetor, use analyzer
- Check oil light, cards and plugs
- Check the extinguisher bracket and carriage
- Check clutch pedal free travel (1" Min. 8000) in 2" min V-8's)
- Check generator and oil pressure light
- Check maximum air pressure
- Check tachograph, tachometer and seal
- Adjust service brakes
- Adjust emergency brake with truck in motion

- Brake air tank
- Check Bag and floor fire
- Check oil spill spray bulb #1
- Check 5th wheel bolts, padlock, side angle and ground strap
- Change oil in Wagon compressor
- Check level of oil in rear case #2 #3
- #4 #5 #6 #7 #8
- Check oil ignition valve and replace as needed
- Check muffler and oil leak connections
- Engine running on fast idle check for air, oil, water leaks
- Remove battery, clean, check and recharge, tighten all terminals
- Check manifold, exhaust pipe, muffler and tail pipe, muffler brackets, tighten all bolts and nuts

"B" Inspection 18,000 miles (includes "C")

- Remove carburetor air cleaner, disassemble, wash and reassemble
- Check fuel pump bowl and screen
- Check comp. mounting links and check air filter
- Check water pump and lubricate
- Camshaft - O.K. required overhauled
- Adjust tie rod and head throttle, drive cables
- Check dash instruments and switches
- Check the rods and drag link
- Check king pin and bushings
- Replace motor support bolts, rollers, if needed
- Inspect universal joints and drive lines, tighten companion flange bolts
- Inspect differential assemblies for oil leaks and tighten mounting nuts and bolts
- Check horns and windshield supports
- Check voltage regulator and reset, if needed
- Replace distributor breaker on V-8's
- Check leakdown on air compressor (less than 25 lbs is minute maximum)
- Check T.F. valve for proper operation
- Check one way check valve, Remove and clean
- Reset test by deep foramen

"H" Inspection 34,000 mi. (incl. "C" and "B")

- Remove, clean and inspect motor, replace if needed
- Check oil mountings, doors, drains, windows and clasp, tighten rods and screws throughout
- Check front wheel studs, O.K. Best
- Check front springs, tighten U-bolts
- Check spring hangers and shackles
- Adjust gear drive support bolts and check for oil leaks
- Tighten bolts in transmission at rear of motor
- Check brake shoe wear, transmission power divider - differential
- Check gas tank vents, connections and lines
- Check torque arms
- Remove and inspect wheel bearings
- Replace oil wheel seals
- Check oil wheel cylinders
- Refill lubricant as needed

Producers Transport, Inc.		Producers Transport, Inc.	
DRIVERS INSPECTION REPORT		DRIVERS INSPECTION REPORT	
Vehicle No.	Date	Trailer No.	Date
Driver I have marked below all conditions which I think should be inspected carefully and repaired to put this vehicle in Safe Operating Condition:		Driver I have marked below all conditions which I think should be inspected carefully and repaired to put this vehicle in Safe Operating Condition:	
FOR TRACTORS— Steering Brakes Rear View Mirror: Left _____ Right _____ Tires Horn Windshield Wiper Headlight Tail Light Stop Light Turn Signals Fire Extinguisher Emergency Light & Flag Accident Reporting Road Kit Hand Brake Tractor Break-Away Control AFTER STARTING ENGINE— Oil Pressure Air Pressure Clutch Air Bumper Air Gauge Temperature Gauge Parking Brake Oil Leak	Check if O. K.	FOR TRAILERS— Registration Reflectors Internal Valve: Operators _____ Non-Emergency Release _____ Fusable Link _____ Damage Cures: Link End _____ Gussets _____ Breechbar Valves _____ Overturn Valve _____ Air Emer. Pressure Release _____ Fusable Plug Delivery Hose Broken Lines to Trailer Electric Lines to Trailer Coupling Devices Clearance & Marker Lights ON TRAILER— Manufacturer's Plate Good _____ Poor _____ ON TRAILER— Tented _____ Re-Tent _____ Proper Reparatoin _____	Check if O. K.
DURING ROAD TRAVEL: Speedometer Cooling System Fuel System Transmission Steering Drive Line Rear Axle Trailer Axles			
DURING UNLOADING— Oil Level Leaks Springs Balance Level Inside of Cab Must Be Clean			
Other Remarks: 			
Abuse Conditions Corrected _____ (Garage Mechanic)		Abuse Conditions Corrected _____ (Garage Mechanic)	

FD-3 Form No. 44
Revised 7-3-58

PRODUCERS TRANSPORT, INC. **DRIVER AND EQUIPMENT COMPLIANCE CHECK** **TO BE FILLED OUT IN DUPLICATE**

Date of Inspection: _____ Date: _____

Tractor: _____ Trailer: _____ Trailer: _____

Steering Mechanism: _____

Pool System: _____

Service (foot) Brake:
Parking (hand) Brake:
Tubing and hose:
Breakaway:

Connections:

Air Brake Warning Device:

Lighting: _____

Devices:

Stop:

Tail:

Turn:

Wipers & WASHERS: _____

Head:
Front Clearance:
Front Clearance:
Side-marker:
Reflectors:
Rear:
Wipers:

Grounds:
Connections:

Windows: _____

Horn:
Rear View Mirrors:
Windshield Wipers:
Speedometer:
Refrigerator Equipment:
Heaters:

Sleeper Berth:
Sehaust:
Tires:
Rear End Protection:
Mfg. Plots:
Air Valve:

Fire Extinguishers: _____

Fire Extinguishers:
Fuses:
Flares, Reflectors:
Flags and Standards:

Square Pumps:
Tire Chairs:
Hand Tools:
Square Bells:

Emergency Load: _____

Emergency Valves:

Door Covers & Gasoline:

Unloading Valves:

Reset Date:

REMARKS: _____

General Condition of Unit: _____

Inspected By: _____

SEE REVERSE SIDE

is built on these seven schedules

PTI FORM #77

PRODUCERS TRANSPORT, INC.

TRAILER "F" INSPECTION (Check One) 30,000
60,000

TERMINAL _____ DATE _____

TRAILER NO. _____

CHECK ALL ITEMS PERTAINING TO THIS INDIVIDUAL TRAILER (INITIAL)

1. Adjust tension units for end play and height
2. Inspect interior and notify Maintenance Dept. of condition of lining
3. Inspect all springs, bolts and center bolts
4. Inspect and repair radius rods and rubbers
5. Check axle alignment _____, correct, if needed
6. Adjust wheel bearings
7. Check wheels _____, lugs _____, studs _____
8. Lubricate and inspect brake cam and linkage
9. Adjust brakes and check application
10. Check for emergency brake valve application
11. Check fuse block _____, fuses _____, and cover _____
12. Check all air lines, hoses and connections
13. Check unloading valves and manifold for condition and leaks
14. Lubricate latch and hinges on safety valve box door
15. Replace diaphragms in air-operated safety valves
16. Check operation of safety valves _____, air gauge _____, interference control valve _____, fusible safety plug _____, if cable operated, repair as needed
17. Inspect tire carrier and repair as needed
18. Inspect dome covers and replace gaskets _____, check fusible plugs _____
19. Inspect clearance line _____, stop _____, turn line _____
20. Road test and check brakes for application _____, check unit for alignment with tractor
21. Check latch assembly on double, and repair as needed
22. Check safety chain on hitch

PTI FORM #78

PRODUCERS TRANSPORT, INC.

TRAILER "G" INSPECTION 90,000

TERMINAL _____ DATE _____

TRAILER NO. _____ MILEAGE _____

Mechanic must initial each item as completed:

CHECK ALL ITEMS PERTAINING TO THIS INDIVIDUAL TRAILER (INITIAL)

1. Take unit to Freshford for GT unit and gear box overhaul
2. Make visual inspection of tank interior and exterior and re weld or repair as needed
3. Check king pin and plate—repair as needed
4. Clean tank interior and clean screws in safety valve pump (report condition of lining to Maintenance Superintendent or Manager)
5. Inspect springs, center bolts, and radius rods
6. Remove wheels, inspect bearings, install new wheel and kit
7. Check one: A. Release brakes and turn brake drums for lining
8. Release brakes and install new drums
8. Lubricate and repair brake cam _____, linkage _____, and check adjusters
9. Check all air lines _____, connections _____
10. Replace air hose glad hand rubber gaskets
11. Check wheels _____, lugs _____, studs _____
12. Replace all brake diaphragms and brake hoses
13. Adjust brakes and check application
14. Check emergency brake valve for proper application
15. Check fuse block _____, fuses _____, and cover _____
16. Check all unloading valves and manifolds for condition and leaks
17. Remove, inspect and repair safety valves
18. Lubricate latch and hinges on safety valve box door
19. Replace diaphragms in air-operated safety valves
20. Remove safety valve air pump and replace bushings

(CONT'D ON BACK)

PRODUCERS TRANSPORT, INC.

LEASED OPERATORS 30-DAY INSPECTION

TO BE COMPLETED BETWEEN THE 1ST AND 10TH OF EACH MONTH

Description of Vehicle: HAKE YEAR _____ MODEL # _____ SER. # _____

Type: TRACTOR TRAILER _____ STATE: _____

Owner's Name: _____ Address: _____

INDICATE IN THE PROPER COLUMN THE RESULTS OF THE INSPECTION OF EACH ITEM.

ITEMS TO CHECK:	Not Defective	Defective	Description of Defect
Wheels			
Bulky			
Cooling System			
Brakes			
Drive Line			
EMERGENCY EQUIPMENT			
Bully Kit			
Reflectors & Flags			
Jack & Handle			
Fire Extinguisher			
Engine			
Exhaust System			
Clutch			
Horn			
Light-Cab, Head, Stop			
Speedometer			
Springs			
Swearing			
Tires			
Wheels & Lugs			
Windshield Wipers (2)			
Turn Signals			
Max. Air Pressure			
With Air Pressure at Maximum, apply brakes: not over 30 lbs per minute			
Disconnected trailer hose to oil tractor protection valves: no line allowed			
Rearview mirrors (2)			
Tractor to trailer air hose & light cord (No chafed hose or bare wiring allowed)			
Low air pressure indicator			
Line check valve, between comp. and tank			
Clearance Lights			
Stop Lights			
Turn Lights			
Reflectors			
Wiring, No Fraying			
Fuse block cover, Junction block and covers			
Service brakes and air hoses			
Safety Valves			
Test Date Markings			
Static Strap			
Splash Guards			
Hoses (How Many)			
Tires, Wheels, Lugs			
Tank brake air tests			
Dome covers and gaskets			

21. Check operation of safety valves _____, air gauge _____, interference control valve _____, fusible safety plug _____, and valve _____, distribution block _____, (Note if cable operated—repair as needed)

22. Inspect dome covers and replace all gaskets

23. Inspect tire carrier and repair as needed

24. Check latch assembly on doubles and repair as needed

25. Check safety chain on hitch

26. Road test and check brake application _____, check unit for alignment with tractor _____, stop _____, turn _____, lights _____, (Note if cable operated—repair as needed)

27. Inspect clearance lights _____, stop _____, turn _____, lights _____, (Note if cable operated—repair as needed)

28. Steam clean shell and underconstruction and repaint bulky section of needed

An impressive system of checking equipment keeps the PTI fleet operating at peak levels. Shown across the top of the pages are the four forms used to make the periodic inspections. All are scheduled on a mileage basis. The "drivers inspection report" is completed at the end of every tour of duty; the "compliance check" is a garage report; the 30-day inspection is a routine required by ICC.

PTI . . . the new transports are designed for rapid loading and unloading

assigned by the main office except B. Therefore, mileage records must be maintained at New Buffalo. The original record on this is a weekly mileage report from each broker, which is posted by the maintenance clerk, who spends full time on keeping these records.

There is, in addition to all these, a 30-day inspection, which is required by the ICC. This is an entirely separate requirement, and some of the inspections overlap with the C, D, and E inspection checks. ICC regulations require that this be done by an outside inspector.

PTI enforces compliance with the required inspections by deadlining the equipment. First a warning is sent out, giving a grace period of up to about 2500 miles past the due point. At the end of this time, the equipment must be taken out of service until the inspection has been made.

One final inspection is required—the "Drivers Inspection Report," which must be filled out at the close of every tour of duty. This covers 36 items on the tractor and more than a dozen on the trailer.

All the records are kept on individual file cards on each vehicle. The mileage is used not only to determine when inspection is needed, but also when a replacement of equipment or additions to it are in order. PTI feels the minimum mileage for a unit should be 75,000 per year to make it pay its way. Each should average 6000 miles per month, and 12,000 miles in the winter peaks. If a unit falls much below this figure, it is time to look for additional business to build its load back up above the minimum.

Transport Design

Although PTI's new transports are purchased from several different manufacturers, all carry similar—though not identical—specifications. The barrels are 466 in. long, 86 in. ID, and have a capacity

of 10,970 wg more or less. All are of T-1 steel and have a tensile strength of 115,000 psi. The shell material is .392 in., the head ¼ in.; working pressure of the shell is 250 psi.

Joint efficiency of head and shell is 1.0. That is, the welds are 100 per cent the strength of the shell itself. A great deal of care has been taken in the barrel fabrication. The barrels are stress-relieved. According to the mill specs of one manufacturer (Beaird), the plates are freed of mill scale as completely as possible. While they are still in the flats, they are grit-blasted on both sides. After the stress relieving, they are again grit-blasted to remove further scale caused by the heat of the process. Beaird reports that on T-1 units, mill scale has been a particularly bad problem, since it has a tendency to break loose and lodge in high-priced product unloading pumps.

A very expensive paint, resistant to many chemical fumes, has been used on them. Test plates of the finished coat were left for as long as a week, submerged in anhydrous ammonia and exposed to its fumes. On removal, no blistering or discoloration was evident. Many paints, according to the manufacturers, discolor badly in the Chicago area due to the numerous chemical plants in the area.

All barrels are smooth-bore. PTI is satisfied that baffles are unnecessary, having had no bad experiences with product surge. Elimination of these plates lightens weight a great deal, and therefore contributes to the payload that can be carried.

Another weight saving feature is the plastic fenderettes, standard on all the units.

The transports are particularly designed for rapid loading and unloading. They are designed to receive a 9000-gal. load in 18 min.—that's 500 gpm. There's a 3-in. combination vapor return and splash fill outlet at the rear of the vessel, and an additional 3-in. combination splash fill and vapor line just forward of the center of the

vessel, near the front landing gear brackets. Initially, this latter receptacle was equipped with a blind flange so that it would not be used unless dual loading facilities were available.

The units can unload 9000-gal. in two hr at present, but should increase this substantially soon. Two 3-in. liquid outlets are provided at the rear of the vessel, one on each side of the vapor-and-spray-fill line. At the center position, by the flanged vapor-and-spray fill line, is another 3-in. outlet, also flanged. This is for eventual use with a belly pump, still in the development stage. (Blackmer recently showed a 4-in. aluminum pump, weighing less than 100 lb, which would presumably be suitable.) When this arrangement is installed, PTI expects to unload at 350 gpm!



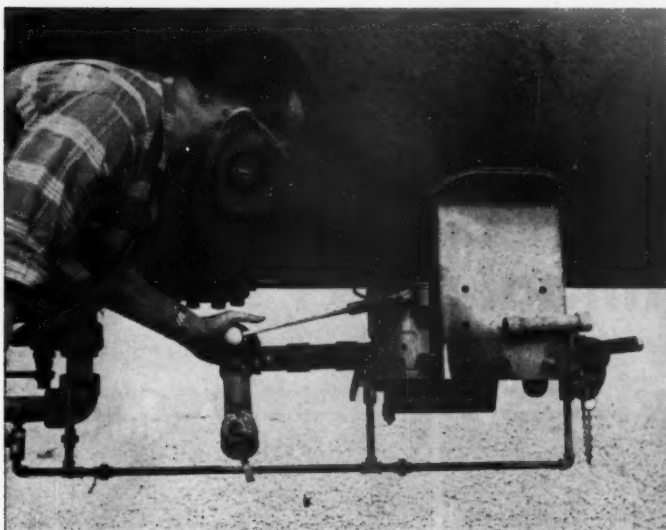
To take care of the changeover, a 3-in. internal tube has been run from the front liquid outlet to the pump located by the rear outlet so that the vehicle can be fully unloaded from a front position.

Dual unloading is now a fact in much of the territory served by PTI. According to Peirick, all new bulk plants there are being built with dual unloading inlets. In Illinois, about 30 to 40 per cent of them are so equipped. Most Wisconsin plants now have it.

Says Peirick, "The demurrage charge of \$5 an hour is becoming more important to these dealers, prompting them to go to dual unloading."

The units are equipped with internal valves that stay closed at all times, except when the vehicle is being unloaded. Thirty of the transports have hydraulic internal valves; the company is still experimenting with these. These can be remotely controlled from the front and rear of the trailer. A hydraulic pump actuates the hydraulic internal valve on the product and vapor lines, but it can readily be adapted to air or mechanical operation.

The air lines running from the rub plate to the sub-frame assembly are aluminum tubing. This is



PTI's newer units are equipped with internal valves, which stay closed at all times, except when the vehicle is being unloaded.



Plastic fenderettes, which save 180 lbs., are only one of many payload-increasing features of the fleet.

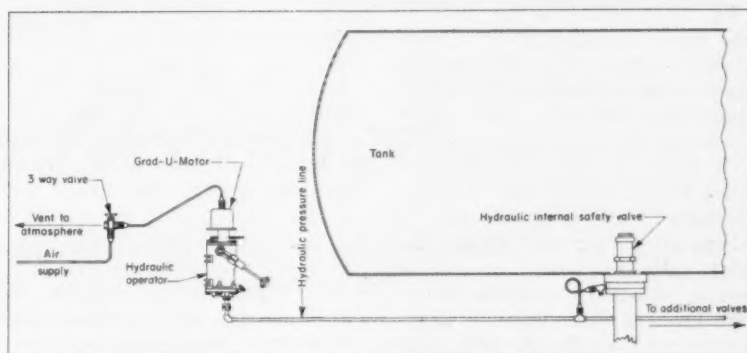
light in weight (contributing again to payload) but gives adequate protection from rock damage, or accumulations of ice and snow.

Gauges are conveniently placed and well protected by a guard and by the ladder, behind which they are located. Set in the curb side, they are low enough for the driver to read without climbing the ladder. Nine outage gauges are used—eight fixed level, calibrated at 75, 78, 80, 82, 85, 87, 90, and 92 per cent and one special outage gauge. Each bleeder is calibrated with water and its exact percentage stamped in metal.

A rotary gauge steel face is also included in this grouping. It is permanently locked in position when calibrated in order to eliminate rotation of the dial face. The packing nut is sufficiently tight to support the rotary gauge arm, and the arm is supported internally as well.

The calibrated water content of each unit is stamped on the vessel adjacent to the rotary gauge. A protected laminated plate showing calibrated gallons and percentage of each of the fixed level bleeder gauges is mounted in the rear cabinet. In addition, the gallons of liquid by percent of the rotary gauge reading, both clockwise and counterclockwise, are stamped in.

Location of clearance lights has been changed in the units most re-



The hydraulic internal valve control system being used by PTI is similar to the above schematic, although air control is shown on this unit.

cently built. Formerly they were set midway up the side of the vessel, where they were in line with the rear view mirror. With each small change in direction, they would sweep across his field of vision, causing confusion and, eventually, fatigue. In some units they have been raised out of the line of sight; in the newest units they have been lowered.

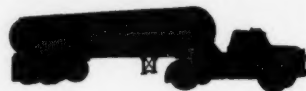
Circuit breakers are provided in the wiring system so that, in case of a short, only those lights that are on the defective circuit are extinguished.

In line with weight saving, plastic fenderettes are now standard on PTI transports. This saves an estimated 180 pounds. Hose tubes are of aluminum, but an experimental plastic type is on order for units

that will be built in the future.

Other weight-saving features include the elimination of the landing gear, saving 285 lbs; the spare tire and carrier, saving 235 lbs; the baffles, saving 480 lbs; and the use of tubeless tires (with their special rims), which saved 260 lbs.

The savings with just these four items, plus the plastic fenderettes, but not including the light hose tubes and the use of T-1 steel, totals 1440 lbs. Convert that to gallons of product, multiply it by three (the number of daily trips at the peak of the season), and you'll come up with an impressive payload increase. An increase that will help keep PTI in the No. 1 position among the nation's common carrier haulers of LPG! ■



Model truck terminal nets Petrolane

\$40,000 savings in first year

ROBERT CLAY • Managing Editor

WHEN a business increases sales nearly 50 per cent in one year, it ought to have some growing pains. Not the least of these would be temporarily reduced operating efficiencies with corresponding higher operating costs.

It comes as quite a shock then, when Petrolane Gas Service Inc., a company that increased sales a whopping 46 per cent during the past calendar year, reports an equally whopping operating economy. Leonard Andrews, vice president of the Long Beach, Calif., firm, says a new truck terminal—now rounding out its first year of service—is estimated to have already saved \$25,000 to \$30,000 on one individual cost factor, truck mileage! And, Andrews estimates, less tangible savings on other cost factors bring up the total savings for the terminal's first year to approximately \$40,000.

Such savings under rapid expansion conditions were possible only through thoughtful planning and successful execution of that planning. Expansion plans are nothing new to Petrolane, since the company has made a habit of growing at a rapid rate. The idea of a new terminal was also not new, since the old one had been close to the bursting-at-the-seams category for some time.

Still, the project was something

of a venture into the unknown. While most other large LPG marketers obtain their bulk supply via railroads, pipelines, or private truckers, Petrolane supplies its own bulk plants. And—with the exception of its new and relatively small Alaskan operation—all the supplying is done with Petrolane's own trucks.

To accomplish this, the company's wholesale marketing and supply division maintains five terminals: two in California, at Long Beach and Bakersfield; one in Seattle, Wash.; one in Billings, Mont., and one in Salt Lake City, Utah. The latter three are relatively small operations, having four to six trucks and 10 to 12 people. The Seattle and Billings terminals, however, are due for building and expansion programs as soon as suitable sites can be found.

The two California terminals are major facilities, each harboring a score of trucks and each located in the heart of a petroleum field. Long Beach is just south of Los Angeles, on the Pacific Ocean, Bakersfield is 135 miles to the north, at the base of the famed San Joaquin Valley. Transports from this facility fan northward up through the huge, agriculturally-rich valley.

Transports from the Long Beach terminal service 20 Southern California bulk plants, some actually north of Bakersfield (when mountain ranges separate them from Bakersfield). The terminal also supplies 22 Petrolane bulk plants in

Arizona, New Mexico, Nevada and Utah, plus three in Mexico, just south of the border. Approximately 60 per cent of the trips are out of California. The longest ones, to Utah and Nevada, require 48 hours. The shortest are right in the Los Angeles city limits.

For years, Petrolane has been serving this ever-expanding territory out of its Cherry St. installation, a combined retail and wholesale operation in Long Beach. The two operations were carried out by separate Petrolane subsidiaries, Andrews Butane Co., handling the wholesale end and the Oakford division handling retail.

Petrolane had two big reasons for wanting to get out of the Cherry St. facility:

- 1) It was crowded; and
- 2) It wasn't close enough to the sources of supply.

One year ago, the switch was completed and the Cherry St. site was sold. The Oakford retail operation moved to another Long Beach site, one which is adjacent to a source of LPG. Merely eliminating trucking of the gas from the refinery to the retail outlet is estimated to have saved the company \$12,000 to \$13,000 in the past year!

Finding the right site for a new Andrews Butane home presented more of a problem, since the company wanted a sizeable piece of land near a source of supply. A two-acre parcel was located adjacent to a major oil company's absorption

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This map of the western states shows how Petrolane's five terminals supply LPG to ten states and Mexico. Note the extensive area covered from the Long Beach facility.

plant in an unincorporated area of Los Angeles County between Long Beach and Los Angeles. The important thing was that Petrolane was able to secure a contract for a long term supply of LPG at an average daily rate of 20,000 gal. However, that's only about two loads per day for Petrolane's big 10,000 gal. truck-trailer transports. And *that's* only 6.6 per cent of the terminal's current volume!

Yet, this seemingly insignificant percentage can really count up in one year's time, especially when big transports operate at 30 to 35 cents per mile. Andrews estimates that having just this small supply right at hand has saved the company \$3300 to \$3900 in one year!

And it's all accomplished with little or no effort on Petrolane's part. The oil company brings the gas right into the single 30,000 gal. storage tank on Petrolane's property. A 2-in. pipe carries it 1000 ft from the refinery to the terminal property line, through a chain link fence, and into the tank. The operation is completely automatic and incorporates "all the latest safety devices."

Since the tank-filling operation is automatic, controls turn the product back to the absorption plant if the tank gets full. Usually, however, a load is dispatched as soon as 10,000 gal. accumulates. On the average, this is twice a day. However, the refinery's production varies from 17,000 gal. per day in summer to 21,000 gal. in winter.

The piping system from the tank

closely follows the standard Petrolane procedures described and illustrated in Petrolane engineer Bill Richard's article, "Design Ideas for Building a Bulk Plant," in the November, 1959, issue of BPN. A 150-gpm pump loads the transports via a 3-in. pipe which terminates in the concrete bulkhead that is a must for Petrolane loading-unloading stations (see photo). On the loading side of the bulkhead, this line branches into two 2-in. hoses which simultaneously fill the 4500-gal. truck tank and the 5500-gal. trailer tank.

The loading operation takes about 90 minutes. During that time, the driver is absolutely required to be in attendance, since he is completely responsible for loading his truck. He turns on all valves when he arrives, turns them off when he leaves. As can be seen in the drawing and photos, the loading corner of the yard is completely protected by a row of steel and concrete posts. Along the tops of these posts, above head level, there's a trip wire leading to the safety-shutoff valve described in detail in Richard's article. Thus, the driver can walk the length of his truck and never be more than an arm's length from the trip wire.

The tank has a second outlet. A 2-in. line leads to a 50 gpm pump, which—through underground lines—feeds both the truck fueling station on the opposite end of the terminal and a resale pump in the front, along the street.

Having the source of supply right at the terminal means that often very little time elapses between production and delivery to the customer. For example, it is not uncommon for LPG to be in a Mexican customer's hands seven hours after it left the refinery!

As previously indicated, however, about 93.4 per cent of the LPG delivered by the terminal's transports comes from other refineries. There are 15 such sources, ten of them in the Los Angeles basin, and five in the Ventura oil fields, 85 miles to the northwest. The monthly supply—and number of loads—from each refinery closely follow the company's commitments. Most of the LPG comes from a handful of suppliers, all within five miles of the new terminal.

And that is exactly how the bulk

of that \$40,000 saving is accomplished. The new location is about 6½ miles closer to the major sources of supply. Depending upon which way the truck goes after it picks up the load, this can mean a saving of from 6½ to 13 miles per trip. At 30 to 35 cents per mile, this can add up to an amazing sum when approximately 10,000 trips are made per year. Andrews figures that bringing the trucks 6½ miles closer to the source of supply saved \$25,000 to \$30,000 in the first year.

There are many additional savings, most of which—though definite—are hard to express in dollars and cents. One group of savings comes from the convenience of the location—apart from its proximity to the refineries. Roads leading to the terminal are relatively lightly traveled. And—and this is most important in the congested, sprawling Los Angeles area—the terminal is only two stoplights from the Los Angeles freeway system. The resulting savings are threefold: reduced driving time, reduced wear and tear on drivers' nerves, and reduced chances of accidents.

As previously indicated, these savings are estimated to have added up to an amazing \$40,000 during the terminal's just completed first year of operation.

How does this dollar-saving terminal operate? Simply and efficiently, as might be surmised from the accompanying plot plan. Terminal manager, Richard Maine gives great credit to "the opportunity to design a base as we wanted it" and stresses the importance of "proper mechanical facilities."

Except for the buildings, strips of grass, and flower beds, the entire 150 ft x 600 ft plot is covered with gravel. Since all trucks come in one gate and go out another (to avoid potentially dangerous left turns), they have defined in the gravel a clearly visible semi-circular roadway, indicated by dotted lines in the drawing.

The incoming driver takes his truck into the service bay where he checks his water, oil, and tires. Then he backs it out and parks it against the back fence. After only one to two hours of rest, the truck is filled and fueled by the outgoing driver, who then proceeds through the "out" gate.

If minor repairs are needed, they

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This system utilizes splash filling, which creates a refrigerated condition and reduces the vapor pressure. Then tank can be filled without using a vapor return hose. Also, the direct flow on the separate fill valve cuts friction to a minimum

and reduces the strain on the truck pump. Rego engineers, in conjunction with Master engineers, have designed this new Multi-Valve® for the exclusive use of Master Tank & Welding. It cuts the time of each delivery stop and increases the number of calls each truck can make in a day. All this adds up to greater PROFITS. Another improvement has been to add a check lock to the bottom of the tank for liquid withdrawal.

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TRANSPORTS



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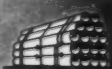
FILLING STATIONS



FARM CARTS



REFINERY



LINE PIPE

are made during the truck's layover period. The terminal is completely equipped to handle all minor and major repairs. "Every spare part that could possibly be needed" is in the parts room. Spare engines and transmissions are always ready to be dropped in on short notice. A new transmission can be installed in two hours, a complete engine swap made in eight to ten hours. The terminal has its own tow truck.

Staffing the facility are four full-time mechanics, a tire and service man, and a general helper. All work a 7-to-5 day, but if a truck needs work in the middle of the night, a mechanic is immediately called in to do the job.

Regular maintenance is carried out on the following schedule: every 400 miles, a "short lube" (greasing the drive lines and checking the transmission, rear end, and crank case); every 5000 miles, changing the oil filter; every 10,000 miles, changing both the oil filter and the oil; every 15,000 miles, a tune-up that includes plugs, points, and heat exchanger.

"Overhauls?" echoes Maine. "Some of our Hall-Scotts just go and go and go. Usually we drop the pan at 100,000 miles and have a look. Otherwise, we just keep them going until they start using oil or making noises."

Frequently trucks are commercially serviced on the road, particularly on longer trips and during the rush season. For the longer trips, commercial establishments at Bishop, Calif., and Phoenix, Ariz., have been selected for regular patronage. While the truck is serviced the driver sleeps at a nearby motel.

During the peak season, some trucks may not get back to the Long Beach terminal for a week. In that case, they would be picking up loads in the Ventura area and delivering them in the northern sector of the terminal's territory. Relief drivers would then shuttle up from Long Beach in a pick-up.

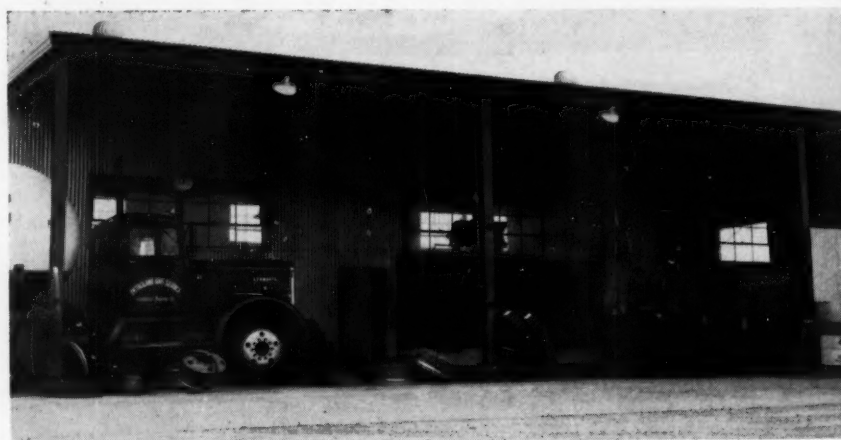
Normally, each truck gets back to the terminal every day, or at least every 36 hours. Yet, amazingly enough, at "most times, you could fire a shotgun right across the terminal and not hit anyone," as Maine puts it. This, of course, is a tribute to good planning and good management. Maine is proud of the way the equipment is kept working,



1. This view from the front of the Long Beach terminal shows the main building, which contains office, garage, and parts room. In the foreground is the small structure housing the resale pump that serves drive-in traffic.



2. At the back of the main building, the roof is extended to form the service bay. Here, an incoming driver pulls in his truck to check his oil, water and tires. Note the overhead lubrication equipment and the routing blackboard on the wall.



thanks to short, efficient layovers.

Because of this seeming capacity for a much higher volume—and the Petrolane penchant for rapid growth—the question of the company's future plans for the terminal is inevitably raised.

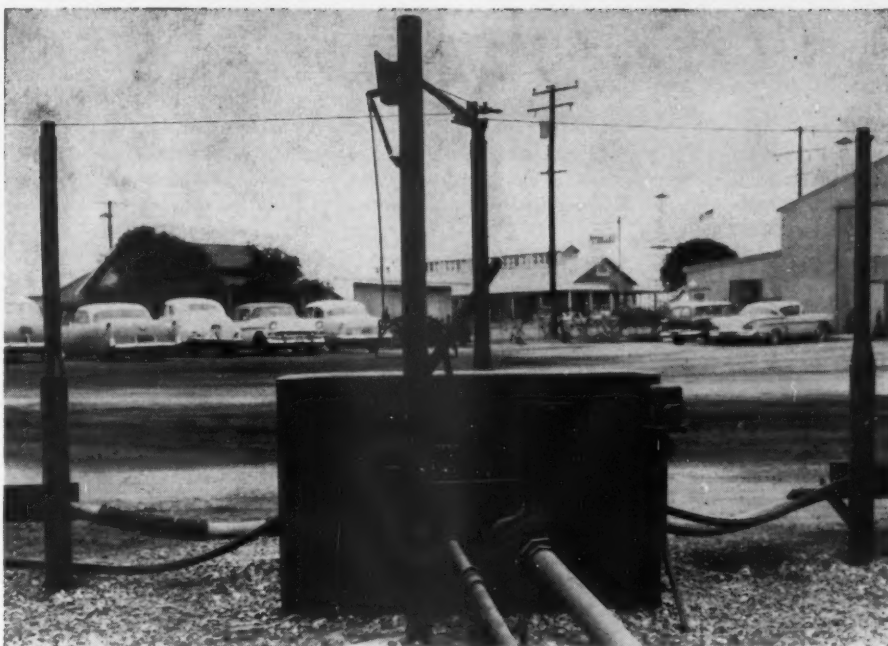
"While we have only 19 trucks here now," Maine says, "23 or 24 operated out of the base all last

winter. Actually we could probably handle 100 trucks if we lined them up for lubrication and service and hired night service men. In practice, we probably will not want more than 30 trucks in summer and 35 in winter. More than that would disturb our smooth-running system too much—with uneconomic results."

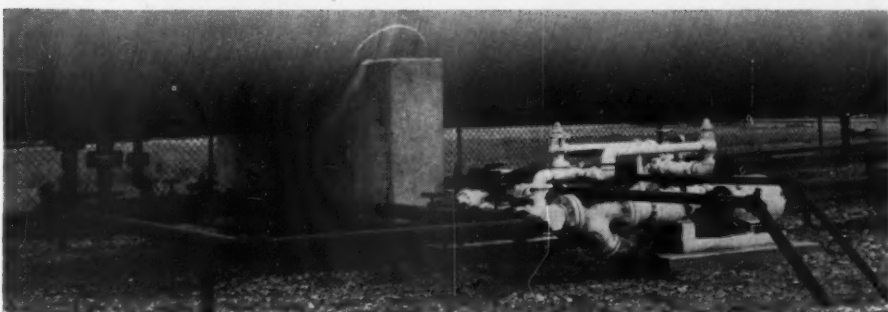
3. Here's an overall view of the 30,000-gal. bulk tank which is supplied by the neighboring absorption plant. Note the concrete bulkhead from which the loading hoses emerge, the storage troughs for the hoses, the concrete and steel posts on which the troughs are mounted, and the safety shut-off valve trip-wire along the tops of the posts.



4. Looking at the same concrete bulkhead from the opposite side (standing near the tank), we see: the three-in. pipe that leads to the loading hoses, the vapor return line, and the safety shut-off valve trip mechanism, as well as some of the equipment mentioned in caption No. 3.

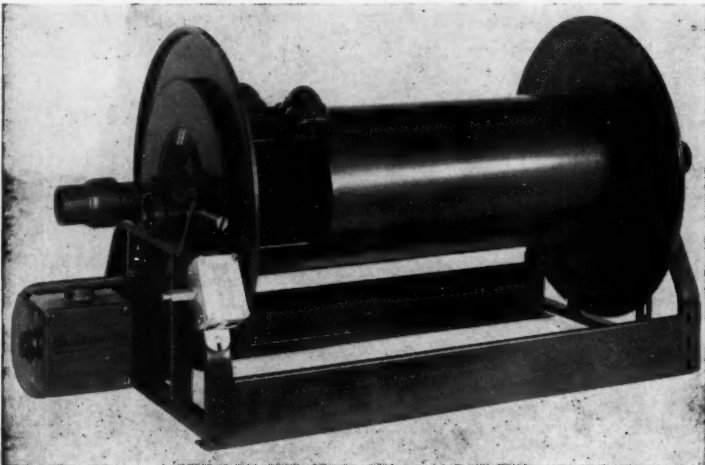
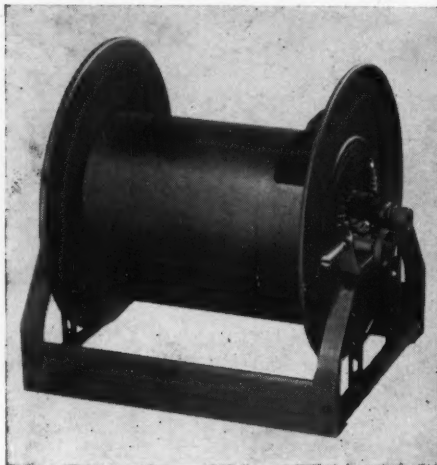


5. This tank-side close-up shows the piping and pumps that supply the three-in. line shown in picture No. 4. That line is visible on the right side of this photo. The two-in. line and the vapor return line going underground in the foreground are for the resale pump and the fueling station.



6. Here's how the 30,000-gal. tank gets its supply—through the two-in. pipe that passes through the chain link fence and makes a sharp left turn to the absorption plant 1000 ft away. Another two-in. line returns the LPG in case the tank becomes full, the whole operation being entirely automatic.





At left is a single outlet LPG hose reel. This unit is designed for hand rewind only. The hose reel on the right has an out-board-type swing joint and twin hose connections for liquid delivery

and vapor return lines. Note the compact explosion-proof electric-drive motor, vapor-proof junction box and modern micro switch. It also has an auxiliary shaft for emergency hand rewind.

Things to consider when



Selecting a Hose Reel

E. J. DOYLE, JR., • President, Ardmore Products Inc.

TODAY, more than ever before, time is truly money. More and more dealers are making time studies in every phase of their business, particularly in customer delivery operations, in an effort to cut labor costs.

Whenever such studies are made, it is invariably found that time consumed in hose handling is critical. How much time is consumed is largely dependent upon hose handling facilities.

One reason why the modern hose reel has grown in popularity is that it sharply reduces this time element. But it also overcomes these two other major problems:

Fast hose wear. One of the quickest ways to wear out a hose is to repeatedly kink it or bend it beyond the critical design radius.

Fatigue. Wrestling a heavy hose all day is a tiring job. It is hardly conducive to a sunny disposition,

and customer relations suffer as a result. A deliveryman is more likely to take out his frustrations on the customer when he is exhausted than when he is fresh.

Reels are much more than simply something to wind a hose on. In recent years, they have undergone striking design changes. One area, where the greatest advancement has been made, is in eliminating problems peculiar to the reel itself. For example, it must be compact enough to fit snugly in the reel compartment, easily maintained, and dependable under all outdoor operating conditions. Today's hose reel manufacturer is a specialist who carefully considers such elements as these:

- Hydraulic design of the reel lines to obtain liquid flow with a minimum head loss.
- The range of hose reel types and capacities to meet the many

variables in today's delivery requirements.

• Dimensional limits imposed by the reel compartments that are built as a part of the truck tank assembly.

In an effort to produce reels compatible with these requirements, the manufacturers have worked closely with truck tank builders, and have made intensive field studies. Following are some of the things that have to be considered in reel design.

Design considerations

1) *Availability of space in the overall truck tank structure.* Space is always limited and must be utilized economically. Product pump and reel cabinet dimensions are critical, affecting overall truck tank length.

"We're Closing 7 out of 10 Premium Sales..."

reports
MR. RON ECKLES, Sales Manager
C & H Home Service
Des Moines, Iowa

...with the

Permaglas®
Magic-Heet STORY!



"As a Permaglas heating dealer, we're able to offer our customers a great big *plus* when it comes to comfort," says Ron Eckles, "but comfort can be a pretty hard thing to describe... much less prove. That's where our 'old reliable' Magic-Heet demonstrator takes over."

And how it takes over! Since taking on the Permaglas line and building their sales presentation around the Magic-Heet demonstrator, Ron Eckles and his crew have been signing up 7 out of every 10 prospects. Even last January (normally a slow month), C & H sold 18 Permaglas installations... every one a replacement and every one at full profit. "About the only thing our Magic-Heet demonstrator *won't* do," declares Ron Eckles, "is sign the order."

Magic-Heet, of course, is A. O. Smith's exclusive method of assuring uniform indoor temperature and near-continuous air circulation by actually "tuning" the flame higher or lower in response to constantly changing heat losses. As an important consumer benefit, Magic-Heet puts Permaglas winter air conditioners in a class by themselves. As a valuable selling feature that can be easily and dramatically demonstrated, it's unbeatable.

You, too, can turn lookers into buyers... convert price-shoppers into quality-conscious customers... when you make Permaglas your profit line for the '60s. See your nearest Permaglas Distributor or return the attached coupon without delay.

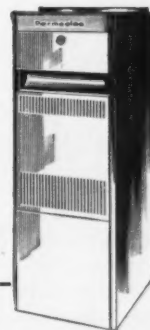
This impressive device, available to all Permaglas warm air heating dealers, enables Ron Eckles to simulate the actual operation of a Permaglas winter air conditioner with Magic-Heet. The gas flame is automatically lowered as the heat-sensing element is warmed in Mr. Eckles' hand... rises again as the bulb is allowed to cool. The Magic-Heet demonstrator (equipped with a handy carrying case) is compact enough to be taken into customers' homes, and includes blower, thermostat, controls and other operative components.

Permaglas gas-fired winter air conditioners are available in a full range of sizes and styles... Hi-Boy, Lo-Boy and Down-Flow. Magic-Heet is optional with all models... for use with all gases, including LP.

Through research... a better way

A.O. Smith

PERMAGLAS DIVISION
KANKAKEE, ILLINOIS • NEWARK, CALIFORNIA
A. O. Smith International S.A., Milwaukee 1, Wis.



A. O. SMITH CORPORATION
Permaglas Division, Dept. BP-860
Kankakee, Illinois

Gentlemen: Please send me full information on Permaglas gas-fired winter air conditioners with Magic-Heet.

Name.....
Company.....
Type of Operation: ☐ Heating Contractor ☐ Heating Wholesaler
☐ LP Gas Dealer ☐ Other (specify).....
Address.....
City.....Zone.....State.....

makers of famous **Permaglas®** heating and cooling... **Burkay®** commercial water heaters

2) *Placement of the hose reel relative to other equipment in the cabinet and relative to cabinet ports or doors.* Hose reels are made in choice of top and bottom wind, left or right hand inlet, and left or right hand rewind drive to meet all conditions.

3) *Size of delivery hose to be used.* The bending radius of hose varies with diameter and construction. The drum diameters of hose reels must fit the hose to avoid flattening and crimping, to protect the hose, and to prevent unwanted back pressure. The ideal drum diameter for LPG hose has been found to be 10 in. Diameters materially less than this tend to cause a "springing out" of the hose, reducing reel capacity.

4) *Internal design of the hose reel piping and fitting assembly.* Every 90-deg. standard pipe elbow provides the same amount of resistance to liquid flow as 15 ft of straight pipe. The modern hose reel is carefully designed to provide a minimum of internal piping and fittings. In addition, material for the assembly is selected in proper relation to line pressures to be employed. For LPG reel installation, piping and fittings are usually of the non-seamless type, and are supplied for absolute resistance to pressures about two times the highest pressures actually employed on LPG delivery trucks.

5) *Rewind drive units.* A variety is available consisting of hand-crank, explosion-proof electric motor, and hydraulic. Power rewind reels are all built to permit hand-crank rewind in emergencies.

6) *On-and-off switch control for electric reel drives.* Switches are not only explosion-proof, but should be weather-tight as well. Modern switches are built with a rubber boot over the push button, to prevent entry of vapor in cold weather that could condense and freeze inside the mechanism and make the switch inoperable.

7) *Selection of swing joint.* This is one of the most critical parts of the hose reel, since malfunction of this part affects the entire fuel handling operation. It of course must be leak-proof. Bearing assembly design must be such that wear can be held to a minimum.

There are two basic swing joint designs, and selection will depend upon user preference. One type combines the swing joint and bearing in a single compact assembly; its advantage is that a rigid, theoretically more leak-proof connection can be made between inlet pipe and swing joint providing care is taken in mounting the unit.

The second type consists of bearing assembly separate from the swing joint, with the swing joint mounted as an outboard extension from the reel. This design does not require exact alignment of inlet piping with swing joint; in fact, a flexible joint *must* be made. As a result, bearing wear is automatically minimized since accidental misalignment is impossible.

Seals for swing joints must have proper chemical and physical properties for LPG application. One recommended type is a 666W Hycar winterized seal, which maintains proper physical characteristics in a temperature range for -60 deg. F. to 100 deg. F.

8) *Rigidity and weight.* Modern hose reel design combines maximum strength with minimum overall weight. For example, to prevent side pressure of the hose from causing deflection of the reel discs, each disc usually has a formed beading at the midpoint of the disc radius. This results in the same disc rigidity as that of a much thicker gauge, heavier weight steel.

Tips in hose reel buying

Decide upon use, maintenance and capacity when buying hose reels. Consider both today's needs and your needs in the immediate future. In certain areas, it has been found that each year, a longer hose is required than the year before. A reel bought today that may be larger in hose capacity than needed, may be a more economical investment in the long run. Your truck tank builder can usually advise you of trends in your particular market.

The question of rigid-versus-

flexible connection between swing joint and pipe connection has never been fully settled. There still are two viewpoints. From an installation standpoint, a rigid connection is only practical when a combination swing joint and bearing assembly is used. However, alignment of the pipe outlet and connection to the swing joint must be accurately made; otherwise, excessive bearing wear is liable to occur.

The advantage of a rigid connection is that chance of leakage is held to a minimum (in contrast to flexible connections). When the swing joint is separate from the bearing assembly, extending outward from the reel, a flexible joint must be used. Exact alignment between the piping and a rigid joint is too difficult to obtain, and extension of the swing joint acts as a lever relative to any alignment error, causing rapid bearing wear. In the final analysis, which type of connection you select is up to you and your truck tank builder.

Swing joints must be lubricated regularly. A grease fitting is always installed. However, care must be taken *not* to over-lubricate. The best way to control this is to use a hand operated gun; *never* use service station pressure lubrication equipment.

Hose reels have several grease points that must be regularly serviced. Sometimes these points are hard to reach. The job can be made easier by replacing the grease fitting with a plastic tube extending outward to a convenient location, and installing a grease fitting at the end of the tube.

On short drop deliveries (where little hose length is needed) urge your drivers to unwind as much hose as possible. A lower back pressure results and delivery is faster. Difference can be as much as 5 gpm.

When replacing swing joint seals, always be sure to use the right type. An incorrect seal can become useless in a little more than a week. For butane or propane, recommended seal is 666W Hycar (or equivalent) winterized to fit wide temperature range. Type supplied usually is for temperatures from -60 deg. F to 100 deg. F. ■

EXCLUSIVE

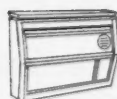


- 1 Exclusive High-Fidelity Heat – available with all Martin vented heaters. Insures more even heat distribution.
- 2 Continental Console Cabinet Design – beauty that creates new customers on sight.
- 3 Lifetime Porcelain Finish and Lifetime Guaranteed Cast Iron Burners – quality that keeps customers sold.
- 4 New Duo-Vent Thru-the-Wall Models – two sizes. Combines advantages of central heat with the economy of a space heater.
- 5 Vented Circulators – 2 series, six sizes, one series with Continental Console styling.
- 6 Vented Radiant Circulators – 3 sizes, all with Continental Console styling.
- 7 Safety Cabinet Series – safe for children, pets, draperies. “Touch-cool” after hours of operation. 3 sizes, all with Continental Console styling and porcelain finish.
- 8 Vented Wall Heaters – 5 models. Combustion chambers carry 20-year guarantee against burnout.
- 9 Floor Furnaces – 3 models, 20-year guarantee on combustion chambers.
- 10 Unvented Space Heaters – 3 radiant series. 9 sizes.
- 11 Gas Fyrelogs – available in oak or birch. Two sizes. Available with andirons.
- 12 Odorless and Smokeless Gas Incinerators – 5 models, including outdoor builders model. Choice of brick or ceramic coated steel lining, both guaranteed 5 years against burnout.

Where else but at Martin can you find so many features, so many models, so much beauty and value? To profit most, handle the complete Martin line. Catalogue and full information on request. Write today.



STAMPING & STOVE COMPANY
HUNTSVILLE, ALABAMA



AMERICA'S MOST COMPLETE HEATING LINE

A challenge to your records

What is the "average dealer's" financial picture?

The author combined income statements and balance sheets for a group of dealers to establish composite averages. Here's what he found.

E. R. BOLLINGER, JR.

BUSINESS records may be thought of as either historical and interesting to look at but of little use in developing plans for future operations, or both backward and forward looking. Let us look into the implications of "both backward and forward looking."

Generally, they relate to past activity (thus are backward looking). But, if there is some basis or standard with which comparisons can be made, then some conclusions may be drawn as to what was done well in the past and therefore should be continued. At the same time, management can spot those things that apparently were not done well, and so should be either discontinued or revised to meet specifications of management planning.

One of the major weaknesses in the L. P. gas industry—from the

managerial viewpoint—is that no comparative device or measuring stick has been developed against which performance might be compared. One of the answers frequently given for this criticism is, that the nature of operations in different geographic areas is so different that a standard cannot be constructed. To this there may be two answers:

1) There is a surprising "likeness" in operations widely separated geographically.

2) Standards should be set for different types of operations in different geographic areas.

There is actually a much more meaningful reason for the absence of comparative standards in this industry. *Accounting records are not sufficiently uniform to permit ready comparisons.* I am not referring now to either the brand of records used or to the brand of machines and other equipment related to them. I am speaking of

the nature of the accounts and records maintained in terms of consistent handling of a particular account.

For example, what kinds of transactions are entered in (a) advertising, (b) maintenance and (c) taxes? The data that our accountants "grind out" is simply not sufficiently uniform to be comparable. As a result, each of us comes to the end of the year, and our accountant tells us that we have made so much profit, and have so much income tax to pay, etc. But—and this is an open question—what *should* we have made? Where could we have operated more efficiently? What changes are indicated in order that next year shall be an even better one?

As a result of this situation, one group of dealers with reasonably similar types of operations decided to submit details of their operations to an independent consultant,

Let's establish standards for profit making: Part 3

Standards of performance set up within a single, individual company are only part of the story. The ultimate goal is a set of composite standards, developed from the records of groups of dealers

whose situations are sufficiently similar, to make comparisons meaningful. The author has made a good start toward developing such composites, and the results are reported in this final article.

EAST, WEST, NORTH OR SOUTH— THE STORY'S ALWAYS THE SAME

Oklahoma Distributor has 250 Tractors on Cities Service LP-Gas

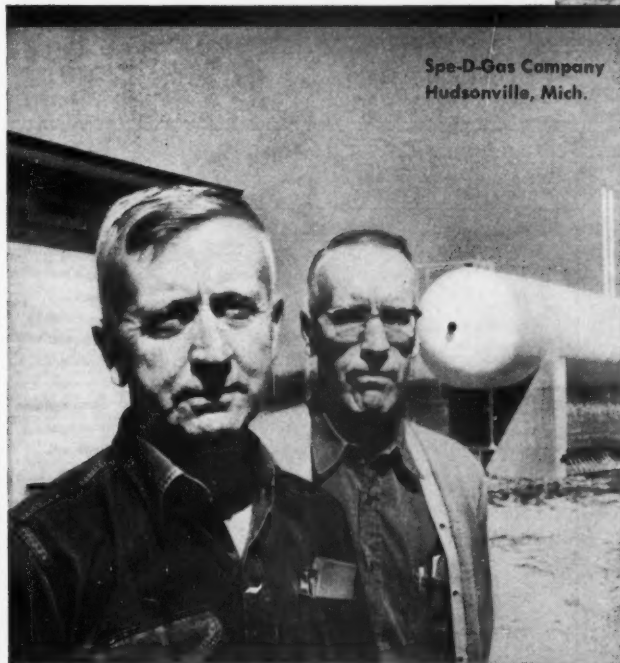
Farms run big in Oklahoma... some being described in miles instead of acres. Kelle Oil Company sells 90% of its Cities Service LP-Gas for farm use.

Aubrey Kelle, partner in Kelle Oil states, "Farms are good year-round customers... and they're permanent. Oklahoma farmers use LP-Gas for everything from heating to air conditioning. Cities Service was a great help to us when we were first getting started in 1951. Technical help has continued to be excellent and service couldn't be better."

Kelle Oil Company
Braman, Okla.



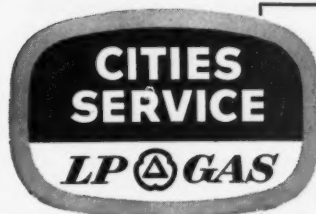
Spe-D-Gas Company
Hudsonville, Mich.



Michigan Distributor Celebrates 20 years with Cities Service

The Hubbard brothers, partners in Spe-D-Gas, have been selling Cities Service LP-Gas since 1939. Now, as it was two decades ago, Spe-D-Gas sells most of its Cities Service LP-Gas in cylinders.

Serving the Hudsonville area out of their plant, Spe-D-Gas has hundreds of customers for bottled gas. W. G. and L. C. Hubbard have conveniently located their plant near the Cities Service two-way pipeline from East Chicago. "Our main storage is over there," says W. G. Hubbard, indicating the Cities Service storage terminal. Cities Service has several such terminals strategically located throughout the Midwest to serve distributors of LP-Gas.



3435 Broadway
Kansas City 11, Missouri

20 N. Wacker Drive
Chicago 6, Illinois

701 Sherland Building
South Bend 1, Indiana

500 Robert Street
St. Paul 1, Minnesota

3101 Euclid Ave.
Cleveland 15, Ohio

7730 Carondelet Ave.
Clayton 5, Missouri

170 University Ave.
Toronto 1, Canada

1658 East Euclid
Des Moines 13, Iowa

626 E. Wisconsin Ave.
Milwaukee 2, Wisconsin



What's the "average dealer's" financial picture . . . (cont.)

COMPOSITE AVERAGE INCOME STATEMENT Year Ended Dec. 31, 1958

	Appliances	Per cent	Fuel	Per cent	Total	Per cent
SALES	\$56,477	23.2	\$186,702	76.8	\$243,179	100.0
Cost of goods sold	45,045	18.5	101,788	41.9	146,833	60.4
Gross profit	\$11,432	4.7	84,914	34.9	96,346	39.6
OPERATING EXPENSES						
*Officers' salaries	2,911	1.2	9,744	4.0	12,655	5.2
*Other salaries	6,972	2.9	23,339	9.6	30,311	12.5
Insurance			5,256	2.2	5,256	2.2
*Rent	451	.2	1,512	.6	1,963	.8
*Advertising	390	.2	1,304	.5	1,694	.7
Maintenance (trucks and cars)			4,542	1.9	4,542	1.9
Other equipment repairs	111	.0			111	.0
Depreciation			10,703	4.4	10,703	4.4
Telephone			1,210	.5	1,210	.5
*Postage	78	.0	263	.1	341	.1
*Heat, light, power and water	186	.0	622	.3	808	.3
License and taxes			2,771	1.1	2,771	1.1
Payroll taxes			847	.3	847	.3
*Accounting and legal	99	.0	330	.2	429	.2
Travel expense			632	.3	632	.3
Supplies used			1,231	.5	1,231	.5
*Dues and subscriptions	70	.0	233	.1	303	.1
*Miscellaneous	548	.2	1,836	.8	2,384	1.0
TOTAL OPERATING EXPENSE	\$11,816	4.9	\$66,375	27.2	\$78,191	32.1
NET PROFIT BEFORE INCOME TAX	(384)	(.2)	\$18,539	7.7	\$18,155	7.5

*These expenses have been apportioned to fuel and appliances in the same ratio as sales of the two. This apportionment is open to some attack.

From these figures a "cost per gal. delivered" may be obtained as follows:

Cost of fuel	\$101,788	Last year (1957) cost/gal. was 17.62¢ per gal.
Operating expenses	66,375	Gal. delivered (1958) = 1,074,426
Add loss on appliances	384	\$168,547 ÷ 1,074,426 = 15.69¢ per delivered gal.
Total	\$168,547	

COMPOSITE AVERAGE BALANCE SHEET

December 31, 1958

ASSETS			LIABILITIES		
Current:			Current:		
Cash	\$ 2,413		Accounts payable	\$17,333	
Accounts receivable	43,476		Accrued liabilities	1,710	
Inventories:			Deposits	578	
Appliances and tanks	17,407				
L. P. gas	6,156				
Prepaid expenses	648				
Notes receivable	11,759				
Investments	900				
Total current		\$82,759	Total current		\$19,621
Fixed:			Fixed:		
Bulk plant	\$41,489		Notes payable (bank)	\$27,190	
less allow depreciation	13,447	\$28,042	Notes payable (officers)	10,590	
Tanks	\$37,272				
less allow depreciation	16,742	20,530			
Trucks and cars	\$24,850		Total fixed		\$37,780
less allow depreciation	14,886	9,964	Total liabilities		57,401
Land and buildings	\$ 3,972				
less allow depreciation	906	3,066	Net worth (equity)		88,321
Furniture and fixtures	\$ 3,017				
less allow depreciation	1,656	1,361			
Total fixed		\$ 62,963			
TOTAL ASSETS		\$145,722	TOTAL LIABILITIES AND NET WORTH		\$145,722

How to interpret income statement and balance sheet

ANALYSIS

(1) Working capital = current assets ÷ current liabilities =

1957	1958
\$113,111 ÷ \$28,046 = \$85,065	\$82,759 ÷ \$19,621 = \$63,138

This indicates the average of long term funds, either through capital investment or long term borrowing, that is available for current operations.

(2) Current ratio = current assets ÷ current liabilities =

1957	1958
\$113,111 ÷ \$28,046 = 4.03 to 1	\$82,759 ÷ \$19,621 = 4.22 to 1

The average dealer is able to meet his current debt through available assets 4.22 times.

(3) Ratio of current assets to total liabilities =

1957	1958
\$113,111 ÷ \$73,817 = 1.53 to 1	\$82,759 ÷ \$57,401 = 1.44 to 1

This suggests that in a state of liquidation, current assets (if inventories and other non-cash assets could be liquidated at book value) would cover 1.44 times the total debt.

(4) Assets acquired through:

Investment = net worth ÷ assets =

1957	1958
\$121,440 ÷ \$195,257 = 62.19%	\$88,321 ÷ \$145,722 = 60.61%

Borrowing = liabilities ÷ assets =

1957	1958
\$73,817 ÷ \$195,257 = 37.81%	\$57,401 ÷ \$145,722 = 39.39%

(5) Turnover of:

Appliances = cost of sales ÷ average inventory

1957	1958
\$73,476 ÷ \$22,688 = 3.24	\$45,045 ÷ \$17,725 = 2.54

L. P. gas

\$113,150 ÷ \$7,152 = 15.82	\$101,788 ÷ \$6,811 = 14.94
-----------------------------	-----------------------------

(6) Distribution of current assets (% of total current assets)

	1957(%)	1958(\$)	1958(%)
Cash	8.91	\$ 2,413	2.92
Accounts receivable	60.60	43,476	52.53
Inventories	24.65	23,563	28.47
Prepaid expenses	.55	648	.78
Notes receivable	4.14	11,759	14.21
Investments	1.15	900	1.09
	100.00	\$82,759	100.00

(7) Distribution of fixed assets (% of total fixed assets)

	1957(%)	1958(\$)	1958(%)
Bulk plants	46.67	\$28,042	44.54
Tanks	39.50	20,530	32.61
Trucks and cars	7.97	9,964	15.82
Land and building	3.68	3,066	4.87
Miscellaneous	2.18	-	-
Furniture and fixtures	-	1,361	2.16
	100.00	\$72,963	100.00

(8) Distribution of total assets (current and fixed)

	1957(%)	1958(\$)	1958(%)
Current	57.93	\$82,759	56.79
Fixed	42.07	62,963	43.21
	100.00	\$145,722	100.00

(9) Average return on investment = net profit before tax ÷ net worth

1957	1958
\$8,492 ÷ \$121,440 = 6.99%	\$18,155 ÷ \$88,321 = 20.56%

(10) Ratio of sales to investment sales ÷ net worth

1957	1958
\$318,947 ÷ \$121,440 = 2.63	\$243,179 ÷ \$88,321 = 2.75

This ratio has particular significance when viewed along with certain other ratios. It may be closely related to "average return on investment."

This computation shows turnover of net worth in terms of sales. The larger the net sales compared with net worth, the less favorable the situation is likely to be from the point of view of conservation and safety because the business operates too extensively on borrowed capital. From the point of view of doing a large volume of business on a small investment, the larger ratio may be favorable because it leads to higher profits. As long as sales volume, and a fair return on the sales are maintained, a minimum of net worth may be ample. However, when unfavorable sales conditions develop, a relatively small net worth cannot absorb resultant losses.

HOW TO USE THIS ANALYSIS

An analysis of financial statements may be either internal or external. Each method may reveal important information to management.

An internal analysis compares ratios and amounts on one statement with similar amounts and ratios on previous statements of the same firm.

An external analysis is based on information obtained from outside the firm. One source of such information lies in composite of statements from a group of companies engaged in the same business and having operating characteristics similar to yours.

As an aid in the interpretation and analysis of these statements, all income statement items have been converted to a "percentage of sales" so you may compare these with similar percentages arrived at from your own statements. Furthermore, a number of ratios have been established, and explained as to their significance. Your ratios should be compared with these.

so that a "composite" might be made. In order that this composite might have real meaning, uniformity of terminology and methods was needed. To accomplish this, the dealers had to adjust a lot of their submitted material.

Once this was done, a composite or average for the participating group was prepared, and each of

the group members compared his company's figures with the group average. In this way, each could conclude either, "I'm about average," "I'm below average," or "I'm above average," as to individual items and composite totals. This composite could be thought of as a kind of standard, though, conceptually there is a distinct differ-

ence. Previous references to "standard" have carried the connotation, "this is what should be"; it would be a mistake to conclude that an *average is what should be!*

The result of this particular composite study appears on this two-page spread and should be studied in terms of what was done and the information provided,

Financial picture (cont.)

rather than in terms of "what should be." Note that this composite is compared with a similar analysis previously performed for the same group.

Following the analyses, each of the participating firms then met with the consultant, and discussed specific meaning of certain items and the application of this information. Questions were raised and observations made that seemed appropriate and helpful to the group involved. It is reasonably certain that this particular group would highly recommend this kind of group undertaking.

Further analytic possibilities exist with this type of material, but it must be emphasized that *before* information can be averaged, with the result having significant meaning, a certain amount of *uniformity* is essential!

There obviously is a feeling among many of us that "individuality" is a characteristic to be respected. To this there is no argument, but, if we are insisting on "business individuality" at the risk of being one of those statistics called "business failures," then there is some question as to the purity of individuality. The suggested uniformity does not require that all firms in the L. P. gas industry "lock-step" in their organizations, or in their operating objectives and philosophies. It simply suggests that better management appraisal on a comparative basis can be attained where there is reasonable uniformity in the recording of results of operations.

Seasonal patterns for geographic areas can be established. Fixed and variable cost analyses can be more meaningfully used. The effect of volume and price relationships can be more accurately determined. Cost of delivering a gallon of LPG can be more accurately determined. Each of these and many other "management tools" can be the logical outgrowth of good *comparable* records.

In an industry that has grown as rapidly as the L. P. gas industry has and which has so many individually operated, relatively small business units, it is most



Inside the transformed warehouse, 35 suspended Reznor heaters face front and rear walls of the building. The rear wall heaters complete the pattern which circulates air counter-clockwise, maintaining continuous movement of the air throughout the building.

LPG to the rescue in warehouse renovation

LOCATED on a reclaimed salt marsh near New Bergen, N. J., a 75-year-old structure was purchased for use as a warehouse. Formerly occupied by the soap products division of a meat packing firm, the building was abandoned because tide conditions turned roadways into mud flats. The new owners easily solved this problem by an extensive land fill program.

The next question confronting them was, "How to efficiently heat a building of this size (81,700 sq ft)? Boilers were too expensive for this type of operation. Tide conditions prevented underground storage, and local ordinances prohibited installing oil tanks above ground. Utility lines were not available.

Heating contractor Harold H. Stuhmann, Union City, N. J., had the solution—propane. Fourteen 500-gal. tanks were installed near the warehouse. The fuel was piped to the building

through 2-in. plastic pipe.

Stuhmann chose 32 Reznor twin-fan suspended units of 300,000 Btu capacity and three single-fan 225,000 Btu heaters for the installation.

Circulation of the large volume of air was assured with the twin fan heaters. They maintained the average temperature of 50 deg. F, which is required in the building.

Even though the warehouse sits only a few inches above the water level, the propane-fired Reznors kept it comfortably heated.

The heating contractor's prescription of gas-fired unit heaters fed from a battery of L. P. gas tanks contributed to the success of a modernization program which transformed a renovated structure into a commercial warehouse. It also permitted occupancy a full year before manufactured gas was available for heating. ■

essential that there be encouraged a real industry purpose—a common goal. Above all, there should exist a feeling of indignant objection to "fly by night" operations that cast indelible shadows over the reputations of conscientious service-directed firms.

Our association activities have gone far to develop this *esprit de corps*, but even more must be done. One of the beneficial outgrowths of group cooperation is the en-

couraging of more cooperation and "compatible competition" within the industry. This result *in itself* is sufficiently important to justify the nominal outlay of time and money required by this type of group project.

Above all, your firm deserves good management, and your customers have a right to expect it. If they don't find it in your firm, they are likely to look elsewhere for it! ■

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GRAYSON CONTROLS DIVISION, Long Beach, California

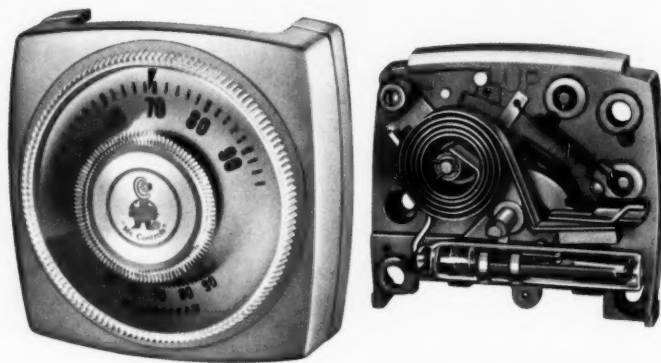


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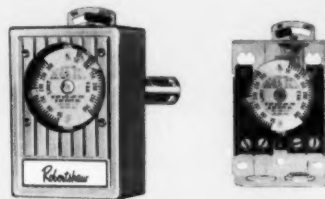
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MOST BEAUTIFUL
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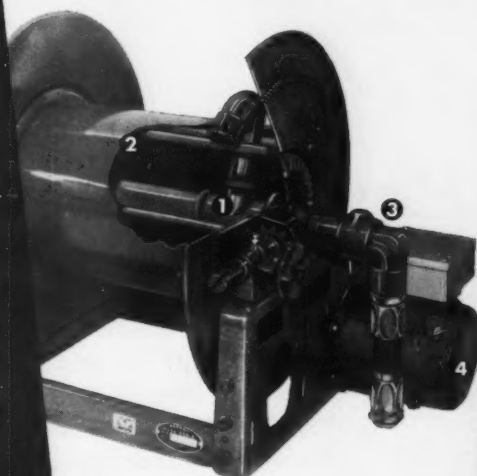
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How—and why—flaming works

Why does the flame eradicate the weeds without damaging the crop? How do you go about flaming major crops such as cotton? In this sequel to last month's article, "The Big Push in Flame Cultivation," Mr. Gotcher answers these and other questions.

FLAME cultivation is nothing more than selective burning. Many row crops withstand more heat, properly applied, than most of the grasses, weeds, and vines that are constantly fighting these crops for the essential plant foods, moisture, and space in the cultivated row. By directing a blast of heat through the cultivated rows at the base of the plants, flaming destroys young tender weeds, grasses, and vines without injury to the older and hardier cultivated crops.

Flame cultivation is not intended to consume the weeds and grasses in the cultivated row. The object is to create, temporarily, a temperature high enough to dehydrate or rupture the plant cells, resulting in the death of the weeds without injuring the cultivated crop.

A plant's resistance to heat is dependent upon its size, age, shape, and structure. Young tender weeds and grasses, especially seedlings, are many times easier to kill than older, tougher ones. Also, a round object is more resistant to the killing effect of the heat than a flat one. This can be well illustrated by igniting paper: a flat sheet is consumed quickly, but the same paper tightly rolled is hard to light.

Some of the large, tough varieties of weeds and vines can be controlled only when they are in

the seedling stage, while others can be controlled by flame when they are larger and older. It is easier to drive the heat completely through the grass blades and tender broad leaves than through woody stems and tightly rolled joints and stalks.

Weed control is not obtained by one flaming alone. Rather it is a series of burnings which eliminates each new crop of seedlings. It is important to remember that flame cultivation does not begin in most crops until the cultivated plants have reached a size, age, or shape which permits flaming.

Mechanics of flame cultivation: To realize the best results from the use of flame cultivation, or any other method of weed control, it is important to bear in mind certain principles governing the germination and growth of weeds and grasses.

Students of weed control believe that up to 90 per cent of the annual small seeded grasses and weeds that emerge from an undisturbed bed during the growing season are those whose seeds lie within one-half in. of the surface of the soil. The deeper seeds, with certain exceptions, will not germinate unless the soil above them is disturbed.

If that part of the drill area that has been exposed to the flame is left undisturbed and no fresh dirt

is thrown up into it, the flame will kill off the young weeds and grasses emerging from the seed that is in the most advantageous position to germinate. Succeeding flammings will eliminate later crops of seedling weeds during the latter part of the season, and few seed, if any, will be left in position to germinate and infest the crop. But any loose dirt thrown into the drill area will contain millions of weed seeds which will germinate and infest the crop as soon as it rains or as soon as the crop is irrigated.

With certain planting and cultivating practices, it is necessary to throw dirt into the drill area to form a bed, or to shape a furrow for irrigation. Under these conditions, the earlier in the growing season this can be completed, the better will be the control of the weeds in the latter part of the growing season, and the cleaner the crop will be.

The flame is more effective when the drill area is relatively flat or slightly rolling. Clods or ridges thrown into this area by the cultivator will both protect the small weeds from the flame and deflect it up into the lower branches of the crop plant.

*J. W. Gotcher is president of Gotcher Engineering & Manufacturing Co., Clarksdale, Miss.



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The cotton flaming apparatus shown here is designed for older models of the Ford and Ferguson tractor. The LPG tank is mounted over the tractor axle, because the weight of both the tank and flamer would tip the tractor if mounted on the rear.

Setting the burners: There are no exact specifications to follow in setting the burners, the regulator pressure, or the speed of the tractor. Each depends somewhat on the conditions of the row and the vegetation to be controlled. The object is to set the burner in such a way that the flame entirely covers the drill area, keeping it clean, with enough heat applied to the vegetation at a high enough velocity to control it.

Normal practice is to set the burners at an angle of from 30 to 45 deg. with the ground. The end of the burner should be six to eight in. from the cultivated plants, directed so that the flame strikes the ground approximately two in. on the near side of the base of the cultivated stalk. The flame will travel along the ground to the far side of the drill area. The burner on the opposite side of the row is set in the same position. This assures that the center of the drill area will be covered twice and the entire surface of the area covered at least once by the flame.

The pairs of burners, one at each side of the row, are set in a staggered pattern so that two flames will not strike each other and be deflected up into the crop.

Where the drill area is flat or practically flat, many set the burners so the flame strikes the near edge of the drill area and passes across the row and beyond the crop.

This is often done in the late season flaming of such crops as cotton because the burners, if set too close to the crop, would drag against the lower branches of the plant and injure them.

Regulator pressure and tractor speed: The fuel pressure and the speed of the tractor are governed by the type, size, and nature of the vegetation to be controlled. The higher the pressure, the harder the heat is driven into the plant. The slower the tractor is driven, the longer the heat is applied to the grass and weeds.

A rule-of-thumb pressure setting would be from 30 to 35 lb at a tractor speed of from two and one-half to three mph. A little observation and experimenting will show which speed and pressure setting will kill the vegetation back fastest.

The fuel: Propane or a butane mixture is used as the fuel, although propane seems to give better results than the butane mixture. A two-row flame cultivator will normally cover from one and one-half to two acres per hr, the four-row unit from three to four acres, and the six-row unit from four and one-half to six acres. The fuel consumed would be from five to six gal. per acre.

These figures are for average conditions. Where the vegetation is quite small, the speed can be stepped up, with resulting decrease in fuel consumed per acre.

Cultivating and flaming simultaneously: The row crop cultivator can be used advantageously to cultivate the middles in the same operation with the flaming. This will reduce the total crop production cost, eliminating the use of an extra tractor and driver to clean the middles. It will also shape the middles so that the skid shoes of the skid-type units will run in a more exact relationship to the crop row, holding the burners in the best possible position.

Where the Model T, or rear tool bar model unit, is used, the sweeps may be attached to the bar to cultivate the middles at the rear of the tractor in the same operation with the flaming. This is of particular advantage where it is desirable to eradicate the tractor wheel tracks. The front cultivator gang may be used for additional cultivation at the same time.

Flame cultivation of cotton: When the cotton plant has reached a height of from six to eight in. or a diameter of 3/16 in. at the base, it will tolerate the heat of the standard flame cultivator. Flaming should be repeated at intervals of from seven to ten days, or as often as necessary to control the weeds and grasses as they emerge.

Whether the middles are cultivated in the same operation with the flaming or as a separate operation, care should be taken not to throw dirt into the drill area. Otherwise, grass and weed seed will be brought in, and will germinate when it rains. The dirt will also interfere with the operation of the flame itself.

The early flamings will cause the lower leaves to scorch and drop off. This will in no way affect the maturity date or yield of the crop.

Should excessive rains cause a heavy infestation of weeds that are getting beyond the seedling stage, the crop can be flamed without damage as often as is required to eliminate them.

For the best weed and grass control, flaming should be continued as late in the season as possible to eliminate the late weed vegetation that will interfere with crop harvest. This will also control weeds which could go to seed and create a problem the following season.



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Flame cultivation, when properly used with pre-emergence chemicals, provides the grower with the most economical and effective weed control available.

With the use of flame cultivation the cultivating sweeps are run at a more shallow depth and further from the plant, thereby reducing damage to the root system and increasing the yield.

A crop can often be flamed to control the weeds when the field is too wet to cultivate.

When flame cultivation is properly and systematically used over a period of years, annual weeds and grasses will be reduced markedly.

Flame cultivation provides a considerable measure of insect control by destroying the pests knocked to the ground while the flaming is in progress. Many growers report that the reduction in the cost of insecticides is greater than the entire cost of the flaming operations. Flame cultivation, however, should not be considered as a replacement for a well-planned insect control program.

Flame cultivation offers particular advantages when the crop is harvested mechanically.

With the use of flame the crop will have less weeds at harvest time and afford a much cleaner sample.

Flame cultivation causes fruit to set higher on the stalk without decreasing the yield or maturity date and allows the picker to do a faster and more economical job. With the drums set higher from the ground, wear and breakage to the machine will be reduced.

Flame cultivation of corn: A drill area might become foul with weeds in the early stages of a corn plant's growth. From the time it emerges until it has reached a height of from one and one-half to two in., the flame cultivator burners may be turned directly down the bed to kill the weeds. The corn plant will be killed back to the ground level, but it will emerge again within a few days. This burning back of the corn will have no effect on either the yield or maturity date.

After the plant is from 10 to 12 in. in height it can be flamed in a similar manner to cotton.

Flame cultivation of grain sor-



Flaming grain sorghum crops is highly advantageous, since the shallow root system is left undisturbed. This is preferable to

controlling weeds by covering them with dirt, a process that requires a deep cut which damages the roots.

ghum: The corn flaming technique is also used with grain sorghum, forage sorghum, sugar cane, and similar crops.

Sometimes, with sorghum and maize, dirt is thrown up onto the drill area to cover weeds. This is done as a control measure. But both crops have a very shallow root system. Cultivating deeply enough to obtain the needed dirt can destroy a considerable portion of the roots. Therefore, flaming should help increase production of both crops.

Flame cultivation of soybeans: The midjet flame cultivator attachment may be used with soybeans when they are six in. high. Normally, however, they are first flamed with the standard flame cultivator when they are from 10 to 12 in. high. One or two more applications are made at intervals of a week. If the standard flame cultivator is used for the first time when they are around 10 in. high, the regulator pressure should be set at about 25 lb and the tractor speed at three mph. Later flammings can be made at higher pressures.

Pre-emergence flaming: Sometimes the weed and the grass population will emerge before the crop. This vegetation can be controlled by pre-emergence flaming.

The burners should be adjusted to cover the entire drill area, and enough heat applied to destroy all vegetation that has emerged. This job will be most beneficial if it is

done as close as possible to the time the crop will emerge. It is a technique that is particularly effective with cotton.

Conclusions: Flame cultivation should not be considered to be a cure-all. Nor will it always succeed in salvaging a crop that has already become highly infested with older weeds and grasses. If given a chance to grow undisturbed, many varieties of weeds become as tolerant to the flame as the cultivated crop.

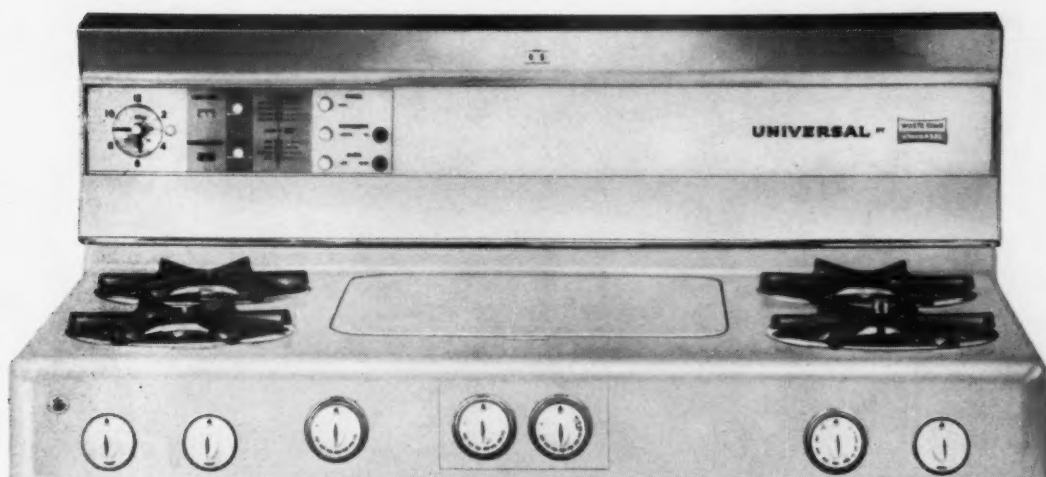
Flame cultivation offers several advantages not found in other methods of practical weed control work. Of these the chief advantage is economy. Few chemical or mechanical treatments can be applied at as low a cost per acre as flame.

The effectiveness of flaming can be quickly determined. Results are quickly evident. This insures the user maximum efficiency for each flaming.

The flame cultivator can be used as often as needed in cultivated crops with no harmful effects to the crop or to soil. An ineffective flame treatment can be rectified immediately.

When a crop reaches flaming size, it may be flamed any time the ground is dry enough to support a tractor. ■

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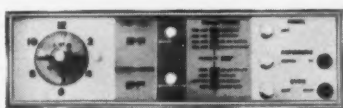
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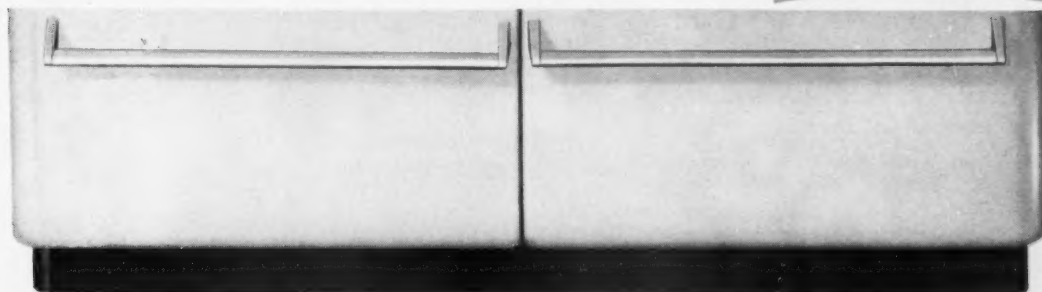
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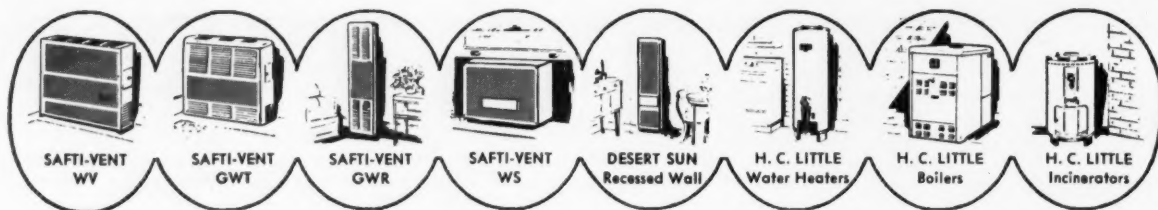


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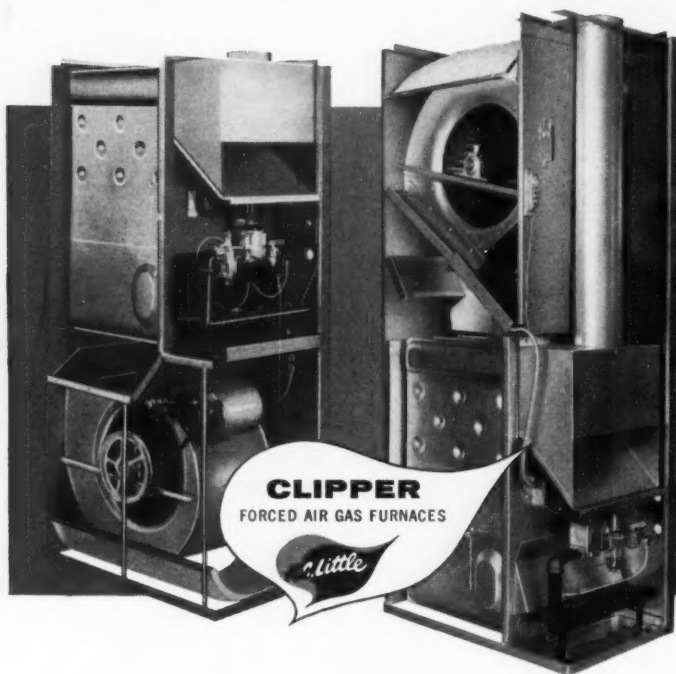
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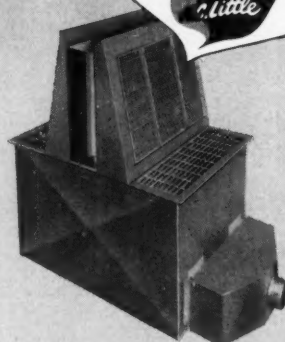
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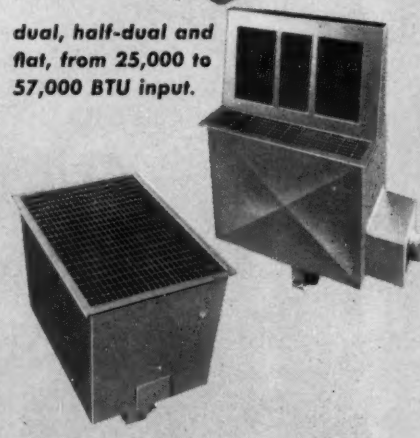
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Don't jump into uniforms!

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JOSEPH KIRSHBAUM • President, Institute of Industrial Launderers

WORK uniforms affect your business in more ways than you might imagine. The right uniform for your business can improve your public relations, customer relations, safety record, employee morale, employee productivity, sales, and profits. However, the most immediate, obvious advantages appear to be company identification, advertising benefits, and safety.

Your customers, for the most part, live in remote areas. When your man arrives at an isolated home, the housewife appreciates seeing him in a neat, attractive uniform that assures her he really is from your company. An imaginative or nervous woman might take a sloppy-looking man in nondescript clothing for an escaped convict or a molester. Even if she sees his truck, she still might not have complete peace of mind.

Besides identifying your man, a uniform with a specially designed emblem identifies your company and its product. It converts every man on your staff into an effective—but inexpensive—walking advertisement. If you already have a fairly complete advertising program, uniforms may be the missing link. If you have no such program, uniforms can be a good start.

Even more important is safety. Accidents generally seem to be increasing and compensation claims are skyrocketing. Save one serious accident and you have saved the cost of a uniform rental program for years and years. Men in nondescript clothes invite accidents. Often, an employee's work clothes are the oldest, shabbiest, most spotted, most ill-fitting things he owns. He may wear them to work because they "aren't good for anything else." Consider the role of

such clothes in one of the most common of accidents—the fall. Loose, floppy, shabby clothes or trousers with cuffs can easily get caught and cause a fall. It is only too easy for the results to be serious.

Selecting the correct work uniforms for your employees is not always as easy as it may seem.

One nationwide petroleum product merchandiser adopted a uniform it was confident would make its thousands of employees the best dressed men in their field. On a model, in the offices of a top executive, it looked wonderful. It was styled after the uniform of a famous general and had even more "fruit salad" than the original. Chosen by public relations and advertising executives who had no uniform experience or expert impartial advice, the uniform simply was not suited to on-the-job conditions. The employees who wore it pumped gas, greased cars, and did many other jobs never done by the general. Furthermore, the uniform had to be dry cleaned—at the employees' expense. Some resented this and wore the uniform for weeks or even months between cleanings. Others tried to launder the uniform at home. In no time at all, the majority looked terrible. The uniform was finally abandoned after considerable financial loss.

The same unhappy result could well happen to any company selecting the wrong work clothes. The moral of this story is that uniforms should be practical and suited to the conditions under which they are to be worn.

Before selecting a uniform, it is wise to test it to see how long it will hold up. The uniform salesman, anxious to make a sale, is often not the ideal person to conduct the tests. Laundering at low

temperatures in mild soap is not an adequate test either. Uniforms should be washed several times under the actual conditions they are likely to meet. Then, observe for shrinkage, color fastness, and tensile strength loss.

On the basis of considerable experience, the member companies of the Institute of Industrial Launderers offer these general recommendations for work clothing:

- All workers who deal with the public should always be in uniforms — clean, attractive uniforms.
- Cotton is usually the best material because it stands up well, can be laundered cheaply and easily, and looks good for its lifetime.
- Standard colors are usually best, but a wide assortment is available.
- Fancy "fruit salad" features should be avoided because they are often expensive, impractical, and hard to launder—and nearly always end up looking unattractive.
- Eye appeal and company identification is most easily obtained with attractive, well-designed emblems on simple uniforms which focus the eye on the emblem and its message.

If you are interested in adopting a uniform or changing your present uniform, you can use the consulting service offered by the Institute of Industrial Launderers (1833 Jefferson Pl. N.W., Washington, D. C.). Hundreds of companies have used our free, impartial service. No strings or obligations of any kind are attached to this offer. No specific recommendations are made on any individual brand of uniform or an individual laundry. We simply recommend general specifications to make sure your new uniform will meet your on-the-job conditions.

The institute offers this service for several reasons. Perhaps the most important is that we don't want people like you to choose the wrong uniforms, have an unhappy experience, and give up the idea of attractive, freshly-laundered uniforms. If we can get you to think before you jump into the project, we'll be happy—and so will you! ■



When the sun goes down, Coastal's profits go up!

WILLIAM T. HARPER • Eastern Editor

• By utilizing a retired serviceman and off-duty firemen and policemen, this Georgia firm has found a way to make 24-hour service profitable.

LIKE firemen, many L. P. gas dealers must always be on call. The best-planned routing systems and the most accurate degree-day bookkeeping are hard put to prevent all emergencies from arising.

It's a costly situation, and one that is constantly getting worse, what with rising wages. Most dealers would be happy to be rid of this 24-hours-per-day, seven-days-per-week service.

But not Coastal Butane Co. For while round-the-clock service is a burdensome cost to most, for Coastal it is actually **profitable**.

Coastal is headquartered just outside the city limits of Savannah, Ga. It has five branch offices and covers 18 counties over a radius of 75 miles in Georgia and South Carolina. The overall operations are headed up by three brothers, B. A., R. C. and H. G. Haupt. Branch offices in Claxton and Pembroke, Ga., are managed by William H. Farris; in Spring-

field and Sylvania, Ga., by Laborn F. Nease; and Haupt Brothers Gas Co., in Hardeeville, S. C., is managed by H. L. Richards. The company started operating in January, 1945 and now has about 5000 customers.

It was the very nature of the working hours of a vast majority of their customers that got the Brothers Haupt thinking about making the "overtime hours" work as an asset instead of a liability. The area surrounding the old port city of Savannah is highly industrialized. Employees in the plants in this area are working right around the clock, 24 hours a day, seven days a week. In many cases, both the husband and wife are working the "swing" or "graveyard" shifts. This means that these people are coming and going at odd hours. It also means that they are more likely to discover their gas shortages and other emergencies at these same odd hours. Coastal used to call drivers in from their homes to make such deliveries and had to pay double-time salary rates for this.

To meet the needs of these customers, the Haupt brothers decided in 1957 that they would have to hire someone on a full-

time basis; someone to be on the job from the time the regular office force closed in the evening until it opened again the next morning. Ordinarily, it would be easy to get a man to fill this bill but the pay scale would be tremendous as so much of his time would have to be paid at an overtime rate. Ordinarily, that is.

But, the Haupt brothers are not exactly ordinary. They decided that, if you can't make the job fit the man, make the man fit the job. In other words, get someone to whom these odd working hours would be appealing.

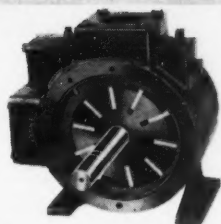
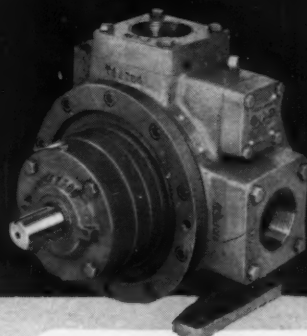
Howard Galipeau was that man. Galipeau retired from the Air Force as a Sergeant after 25 years. He was already drawing a pension that brought him 50 per cent of his service pay. All he needed and wanted was something to augment this. The "all night watch" at Coastal Butane was just the thing for him.

Galipeau started his career in the LPG business by working in the warm weather months on a 4:30 to 8 p.m. shift (the real need for the "all night watch" is, of course, during the winter months when calls for home heating are predominant). He also worked on Saturdays from noon to 8 p.m.

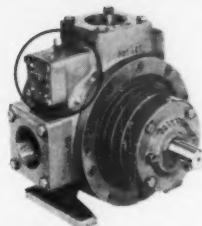
THE TRUCK PUMP DESIGNED FOR USE ON TRUCKS ...

CORKEN CORO-VANE

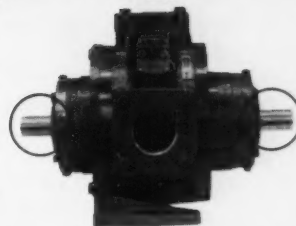
THESE FEATURES MAKE THE CORO-VANE EASY
TO INSTALL AND OPERATE—EFFICIENT, DEPENDABLE,
ECONOMICAL AND LONG, LONG LASTING



All parts, including the long wearing hydraulically actuated blades, easily accessible without disturbing piping.



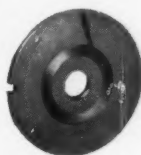
Internal relief valve set for 125 PSI, easily adjustable while operating.



Double extended shaft permits either direction PTO drive.



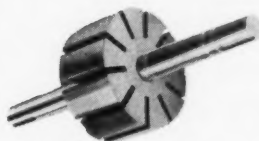
Universal mounting bracket (ductile iron) permits mounting pump at any angle.



Reversible side plates for double life.



Ductile iron flanges eliminate unions, make installation easy.



Rigid pressed-fit steel shaft and ductile iron rotor assembly combine to form solid unit. No holes, no pins to wear out.



Precision ground cam. Extra large inlet and outlet ports for maximum capacity. Easily replaceable.



New improved unitized mechanical seal and bearing cartridge assembly. Gives years of trouble-free service. Can be replaced in a jiffy—by anybody.

MODEL 502-2" OR 2 1/2"
UP TO 80 GPM AT 950 RPM
MODEL 1002-3" OR 4"
UP TO 180 GPM AT 950 RPM



THE BEST DISTRIBUTORS IN THE WORLD
SELL AND SERVICE CORKEN PUMPS

CORKEN'S INCORPORATED

P. O. BOX 1062 • PH. CE 5-5517
OKLAHOMA CITY, OKLA. U.S.A.

Coastal Butane . . . the night men get things ready for the oncoming day shift

and on Sundays from 8 a.m. to 4 p.m. During these months he was taught the rudiments of the business. With the arrival of winter and the increase in "emergency" calls (which have now become almost routine in this area,) Galipeau went on a full-time basis. His hours then became 8 p.m. to 7 a.m., seven days a week. For this he is paid a flat \$1.25 per hour.

It was not long after Galipeau started with Coastal that the Haupts discovered that one man was not enough to run the operation through the night. "Emergency" calls (mostly outages) were averaging about 20 per night. "And these just weren't blind calls," R. C. Haupt relates. "We did, and still do, get some false alarms where the customer still has 20 to 30 gallons left. But, we found that we were getting anywhere from 15 to 25 calls a night from people who were honestly out of fuel."

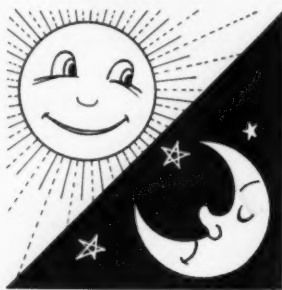
With all these customers needing gas, the man in the office couldn't be making deliveries on the road and be available in the office at the same time. So, Coastal decided to make the "all night watch" a two-man operation. For the second man, the Haupts put on one of the regular employees, Harold G. Willis, who had been with them for 15 years. Working these hours makes Willis the company's highest paid employee and his bosses figure he's worth every cent of it. Willis handles all the outside work—deliveries with a combination cylinder-bulk truck, adjustments, repairs, etc.

Galipeau works inside. He acts as a dispatcher for Willis. He takes the orders from the customers when they call in. Then, too, he has provided his employers with a bonus. Galipeau is very adept at bookkeeping. And this is where part of the profitable situation mentioned earlier enters. During those early hours of the morning, Galipeau does a good deal of the company's bookkeeping. He checks credit ratings. He sets up sched-

ules and routing for the oncoming day shift. And he sells gas at the door, too!

The night shift workers like to come in to pay their bills when they finish work. Quite often they will buy a cylinder of gas while there. Galipeau has taken in as much as \$400 in sales and collections in one night.

Willis keeps busy throughout his shift, too. Just as Galipeau does chores during lulls that will ease the work of the day shift, so does Willis. If there are no deliveries to make, he loads the bulk trucks and has them ready to roll when the regular drivers come on in the morning. This gets the trucks right out on deliveries the first thing in the morning and eliminates the waste of time while the drivers stand idle waiting for their trucks to be loaded. With nine delivery trucks in the fleet, it is easy to see what time (and money) savings can be made here.



Speaking of money savings, R. C. Haupt estimates the company has saved from eight to ten thousand dollars annually in the first two years, using this system. "For instance," he notes, "with Galipeau doing all that paper work, we've been able to let two regular office day workers go. That alone has been saving us \$5000 a year."

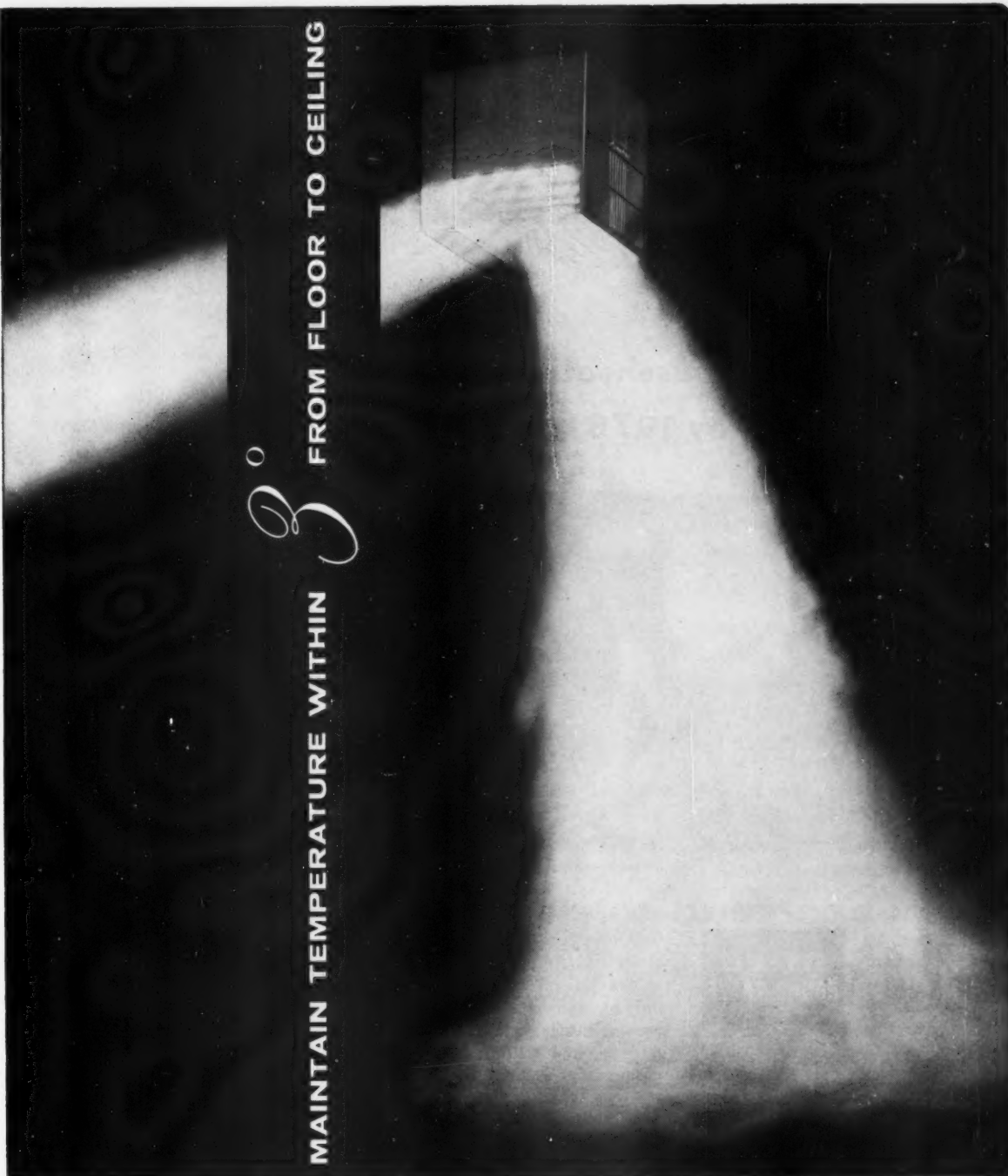
Naturally, even as valuable to the company as he is, Galipeau does like to get some time off during those winter months when he puts in so many hours. The same applies to Willis. The latter, due to the mechanical technicalities

of his job, calls in one of the other regular employees, N. H. Parrish, to fill in for him. This is not necessary in Galipeau's case. What is needed here is another "man to fit the job." Since Galipeau was first hired, the Haupts have found a huge "reservoir" of such men—the local fire department!

"The firemen themselves brought the idea to us," R. C. recalls. "They came here looking for some part-time work and they fit in very nicely with our plans." One of these off-duty firemen fills in for Galipeau as dispatcher when he wants a night off. The firemen are paid the same salary they are making on their regular job. This again eliminates costly overtime pay.

Realizing they have a good thing going, the Haupts don't stop there. They also use the firemen as bill collectors. Coastal used to employ a man on a full-time salary basis to make collections. There were times when this man was idle (believe it or not!) but he was still drawing his full salary. Now, when collections pile up somewhat, the Haupts just call in one or more of the firemen and they go to work collecting, averaging about three days a week. So now, Coastal is paying these salaries only when necessary. If a real emergency arises—such as a sudden, severe cold snap—Coastal has the telephone numbers of all these firemen and can call them in to help with deliveries or filling, etc. R. C. Haupt estimates that this system has already saved the company seven or eight thousand dollars in two years.

Off-duty firemen and policemen, retired servicemen, Social Security and other pensioners, and in some cases, disabled persons, can be a big help to L. P. gas dealers. These people are willing to work at moderate salaries and most often do not demand overtime rates, fringe benefits, etc. They can help overcome the peaks in personnel requirements. They can help you offer more complete and additional service to your customers. And who knows, they may save you money in the process. They did for Coastal Butane Gas Co. ■



FROM FLOOR TO CEILING

3

MAINTAIN TEMPERATURE WITHIN

UNIT HEATERS

ARKLA *Humphrey*

Arkla-Humphrey Multi-Directional unit heaters are accepting congratulations now. At long last, industry's toughest heating problems have been solved by the Multi-Directional!

Tests show a 15.38% fuel saving with only a 3° temperature differential from floor to 18' ceiling! Smoke photo above shows you why. The Multi-Directional is the first and only unit heater to discharge heat straight down, out in front, or from either side, or any combination of these three! Pulling the heat from the ceiling with top mounted fans eliminate over-heated ceilings, too.

Write for complete information.

MANUFACTURED BY
GENERAL OFFICES

ARKLA

AIR CONDITIONING CORPORATION
SHANNON BUILDING LITTLE ROCK, ARKANSAS



management portfolio

Electric utilities' househeating goal: 20 million by 1978!

Response to questions on electric heating competition was quick and spirited at the BPN Sales Roundtable. Everyone there was very much aware of the threat.

Lee Brand, vice president of Empire Stove Co. and author of the "Advance the Gas Flame" program, told of the emphasis the electric utilities and manufacturers are placing on this lead. The following is excerpted from his remarks at the Roundtable, held April 30 in Chicago (and reported on in detail in last month's issue):

During the 25 years prior to 1957, electric heating had progressed slowly up to the point where there were 300,000 homes with electric heating. But by the end of 1958, there were 571,000.

The electric industry's goal is 20 million by 1978.

This year they have allocated some \$20 million to promote electric heat. For a great many years they have promoted electric cooking and an electric water supply. But you will not see any ads this year on electric cooking or water heating. All the ads you will see are on electric heating.

They feel that if they can capture the heating market from you gas men, the water heating and other loads will just naturally fall into place. In other words, all the



Lee Brand, vice president of Empire Stove Co., emphasizes the theme of "fresh air" heating to combat electric competition, before the BPN Sales Roundtable.

heat energy in that home would be electricity.

The Edison Electric Co. has \$3 million appropriated for that purpose. Westinghouse also has \$3 million—and that's only two companies.

Now, AGA has taken a good look at this. I think many of you saw their ad in the Saturday Evening Post—in the April 7 issue, I believe. They have given you the cue to follow. They start out at the top of that ad with, "Don't settle this year for stale heat." Emphasis on fresh air heating is one way to combat electric heating.

But we are also forgetting to advertise and promote the modernity of gas. The electric people are promoting modernity. We seem to forget that people will pay more money for something they think is new and modern than they will for something they think is old.

What are aggressive dealers doing to combat the threat of electric heating? Wally Schuette, one of the best, is not using defensive measures. He has simply taken a good idea, the Hausgas Heating Institute (Schuette runs Hausgas, Inc., in Washington, Mo.) and given it some new twists, and has found the program may be even more effective in warding off electric threats than it was in chasing oil heating dealers to the hills.

We now have 149 homes in our county that are electrically heated. So we have tried to devise a way to fight the battle at the marketer's level.

Maybe you recall some years ago when we came up with the idea called the Hausgas Heating Institute (for a full story, see BPN for July 1955). In this, we tried to put into small-town operation something the big-city people did years ago. We were promoting heating contractors into selling gas heat. It was successful.

Our whole heating program has been built around the building contractors, and this heating institute idea has never stopped from that time on.

We started it by first proving to the heating contractor that we were interested in dealing with him as a heating installer. He was an ally. And now we find he is interested in us because, when you go to electric heat, many times the heating contractor is bypassed. The electrician is getting to be one of his most formidable competitors.

Through our heating institute, we are staying married to the heating contractor. We entertain him, take him to ball games and other

**BPN SALES
ROUND TABLE**



Paul Gottlieb, President of Milwaukee Gas Appliance Sales, demonstrates '61 Hamiltons in his new showrooms.

These '61's have an eager-for-business look!

We don't say these Hamiltons are brand new in *every* way. (After all, the company which invented the automatic dryer can hardly re-invent it every year!)

But there's plenty of new "try me" appeal...plenty of new features to hold 'em still for your floor pitch. And there is, as always, the fine Hamilton loyalty to quality that translates into low servicing costs for dealers. With other costs rising...isn't that your best promise of margin protection?

Isn't it time you joined the sales-making, profit-making Hamilton Dealer organization?

When It Comes To LP Appliance Business

YOU'RE A STEP AHEAD WITH HAMILTON

Hamilton

AUTOMATIC WASHERS • AUTOMATIC CLOTHES DRYERS • HAMILTON MANUFACTURING COMPANY • TWO RIVERS, WIS.



Hamilton step-ahead convenience! New Fabri-Dial twists to 5 different drying heats. Washer offers high-appeal automatic bleach dispenser.

events. We have carried on a continuing advertising program in all the papers in our county.

This year we are trying something just a little different—the lure of trips, going somewhere without it costing anything. Through our heating institute we are offering trips to New Orleans. It represents a pretty nice deal, in that it covers five days for a man and his wife.

We have a drawing for the trip. This is what a person has to do to qualify: If a builder puts gas in the house he builds, he gets a ticket. The heating contractor gets one, too. And our store manager, or the manager in the area, gets one too. So it's a sort of three-way-interest deal, with three people getting tickets on the trip.

If the contractor puts heat and

hot water in, he gets two tickets; if he puts in a built-in range, he gets three.

These tickets are put in a hat, and at the end of November we will pull out the ticket of the lucky winner.

We also tie the whole thing together a little more closely in our advertising. In the program we have carried on for some time, we felt we had run the gamut of institutional jobs. So we have started a program this year which we call "Household Hints." (Since our name is Hausgas, this title ties in pretty well.)

This is the first part of the ad, and its only purpose is to get the housewife to read the entire ad. The first week, the rest of the copy is devoted to the heating contractor. (The "hints" themselves may not, in some cases, have anything to do with heating or the heating contractor.) Somewhere

in the ad, both his name and ours appear.

The next week we work strictly on the new home angle, and a new home builder is tied in. The third week, the ad is devoted to our own business—the things that we sell.

We get the contracting people to participate in this program by interesting their wives. We tell our men that we don't want them to go out to see the heating contractor when he is on the job. He may be up on the roof with a hammer, and may have only 15 minutes to give us. The contact has to be made at night when both the contractor and his wife are at home.

Our program calls for a mailing each month about the trip to Mrs. Builder or Mrs. Heating Contractor. We sort of take her down there to New Orleans and she brings her husband along.

That's one way we are combating electric heating competition.

Should you buy or lease?

In June, tax expert E. H. Mitchell discussed some depreciation problems, and in July he outlined a few situations where the "sale-and-lease-back" transaction might furnish both tax and business advantages. This month he treats briefly the possible advantages to be obtained by the original leasing of plant or equipment, or both.

WHEN you acquire title to plant or equipment, the cost must be capitalized and, theoretically, recovered by depreciation deductions during the useful life of the property. On the other hand, rents and other items paid to or for the owner for the use of such property in your business are deductible in full.

Leasing capital equipment (including autos, trucks, machinery, containers, etc.) has these advantages: (a) the renter postpones large capital outlays; (b) he escapes the expense of maintenance; (c) he can use new, efficient mod-

els; (d) in the face of seasonal business fluctuations, he can avoid being over-equipped and under-equipped; and (e) he can deduct his rental costs as a business expense, thus cutting taxes.

While the cost of renting is necessarily higher than depreciation, the difference is partly offset by the lower investment in capital equipment and by tax savings. If yours is a *bonafide* lease (and not a sale), rentals are 100 per cent deductible from ordinary income. This means that if rental costs are \$50,000 a year, your actual cost, at the 50 per cent tax rate, is only \$25,000. Other benefits are often the avoidance of extra bookkeeping and more freedom from time consuming details.

The popularity of the "lease" transaction has grown rapidly during the last two decades. Its use has spread to many types of properties from truck fleets to machinery and most other business appliances and equipment. Traditionally, they are acquired only by purchase.

Of course, if your cash position is strong, you may prefer purchase and an accelerated write-off. You might make the purchase choice if you are threatened with an "accumulated-earnings" surtax.

Purchase ties up capital for business needs. Leasing, on the other hand, makes earnings available for distribution. In other words, when leasing, watch out for an *unreasonable* accumulation of earnings.

Let us assume now that you need some *new* equipment with a life expectancy of 10 years; that this equipment can be either bought for \$18,000 or rented for six years at \$3600 a year; and that you have a 50 per cent tax rate.

Under the *purchase* arrangement, and using the straight-line method of depreciation, your net cash outlay over the six-year period can be accurately and quickly projected. Depreciation would be \$1800 each year, without change. Here is the tabulation:

Original cost	\$18,000
Minus ½ the depreciation ..	900
First year's net cost....	17,100
Minus ½ the depreciation ..	900
Second year's net cost..	16,200
3rd, 4th, 5th and 6th years —recovery by depreciation (4 times 900)	3,600
Net cost, end of 6th year..	\$12,600

Thus, under the straight line depreciation method, your net outlay, after taxes, would be \$12,600

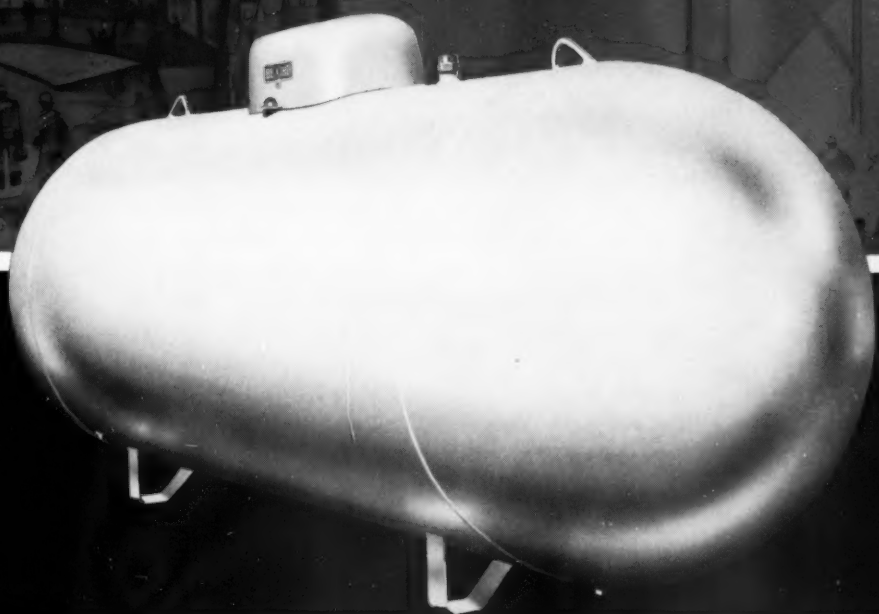
**COUNSEL
AT YOUR
ELBOW**

NEW

\$100,000 SUN and RAINPROOF

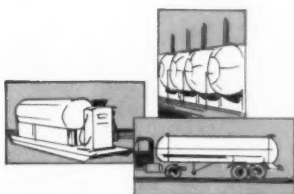
BEAIRD "Weather-Weld" FINISH

Standing two stories tall, the vertical plate shot blast, in the Shreveport plant, can clean plate ten feet wide and forty feet long.



Check these other Beaird quality features:

- Moisture-free Dehydration
- Top Quality Fittings
- Fast Jet Filling
- Profit Plan Financing
- Stocking Point Program
- Merchandising and Sales Aids



Here's your answer to slashing upkeep costs on LP-Gas systems. Beaird's new \$100,000 Weather-Weld enamel finish has set a new record for durability and sparkling beauty. Resistant to stains, scuffs and moisture damage, its long lasting attractiveness builds satisfied customers as it saves you money on maintenance.

The secret of this tough bonded-to-metal finish is Beaird's new assembly line shot blasting equipment. Now every inch of plate used in a Beaird LP-Gas system is scoured clean of mill scale and foreign particles. Paint adheres more tightly to the carefully prepared surface; weld quality is improved and overall finish is smoother. Result is an even finer LP-Gas system and another reason why Beaird is first in sales.

See your Beaird representative for additional information on profit-building Beaird products.

THE J. B. BEAIRD COMPANY, INC.

*A subsidiary of American Machine & Foundry Company
Shreveport, Louisiana • Clinton, Iowa*

PTI



D. E. Daggitt, President

USES BEAIRD T-1

Payliners FOR TOP PROFIT HAULING

Payliner Bonus Features:

Certified Capacity • Stress Relieved •
100% X-ray of all seams • Safety Proved
Design • UL Approved Fittings and
Valves • Air Lines Protected by Steel
Conduit • Lighting ICC with Vapor Proof
Wiring in Conduit • Adjustable Rub
Plate • Jet Filling



You know Producers Transport, Inc. as operators of the largest LP-Gas fleet in the world. Or, perhaps as ranking 20th in the nation in petroleum hauling revenue. PTI operates over 450 petroleum units of every type (57 LP-Transports). But, did you know that the last 19 T-1 transports ordered by PTI were Beaird Payliners? Or, that this included one with 11,121 w.g. capacity that is believed to be the largest T-1 transport ever built?

An important factor in PTI's success has been the know-how that has gone into purchasing new equipment, a task supervised personally by D. E. Daggitt, President. Every transport purchased has been measured by exacting standards for safety, dependability and final pay out. Beaird T-1 Payliners have met these standards and have proved profitable additions to the expanding PTI fleet.

Get top profit hauling for your company — see your Beaird representative about a T-1 Payliner.

THE J. B. BEAIRD COMPANY, INC.

*A subsidiary of American Machine & Foundry Company
Shreveport, Louisiana • Clinton, Iowa*



at the end of the sixth year. The total net outlay at that time under the accelerated methods of depreciation would be somewhat smaller.

If you *lease* the same equipment for six years, each year's outlay would be \$3600, minus the 50 per cent tax saving due to such rental's deductibility. In other words, the net annual cost would be \$1800; and, at the end of the six-year term, the total net outlay would be \$10,800, after the tax savings.

Thus, over the six-year term, the *purchase* would cost \$12,600 (or a few hundred less, if depreciation is accelerated) while the *lease* transaction, over the same period, would cost \$10,800, or \$1800 less. These dollar figures are pointed out here merely to

illustrate one method of considering the economic factor involved in making a choice. Furnish your accountant with the proposed financing terms, both purchase and lease, and he will draft for you a year-by-year chart for comparisons.

Before making a choice, consider carefully all of the factors pointed out above, plus any and all others that are peculiar to your own business.

To choose the lease arrangement, you must first be reasonably certain (a) that it will be the more advantageous, and (b) that the Internal Revenue Service will allow the rental deductions. Such deductions will not be allowed should the so-called "lease" be legally construed to be, in substance, a "sale and purchase." In other words, the lease must be real and must be between "non-related" taxpayers. ■

August-December taxpayers' calendar

August 10

Extended date for quarterly returns:

Employers who made timely deposits of income and social security taxes for the 2nd quarter, file 2nd quarter return. Use Form 941 or 941-T.

Manufacturers, retailers and others who made timely deposits of all excise taxes for the 2nd quarter, file 2nd quarter return. Use Form 720.

August 15

Employers liable for income tax withheld and social security taxes in excess of \$100 for the month of July must deposit such taxes with a depository. Use Form 450.

August 31

Highway vehicle owners or operators must pay the Federal use tax on motor vehicles used on the public highways. Use Form 2290. **Manufacturers, retailers and others** liable for more than \$100 of excise taxes for July must deposit such taxes with a depository. Use Form 537.

September 15

Individuals must pay 3rd install-

ment of 1960 estimated income tax. **Corporations** must file 1960 declaration of estimated income tax and pay 1st installment of 25 per cent of such tax. Use Form 1120-ES.

Employers liable for income tax withheld and social security taxes in excess of \$100 for the month of August must deposit such taxes with a depository. Use Form 450.

September 30

Manufacturers, retailers and others liable for more than \$100 of excise taxes for August must deposit such taxes with a depository. Use Form 537.

Motor fuel users file claim for gas tax refund. Use Form 843.

October

During the month you may deposit income tax withheld and employer's and employee's social security taxes (Form 450), also retailer's and other excise taxes (Form 537) — regardless of amounts withheld or collected — for the month of September, and gain an extension of time in which to file quarterly returns for such taxes, provided such taxes for July and August were timely deposited. See November 10.

October 31

Employers file quarterly return of income tax withheld and social security taxes for the 3rd quarter and pay such taxes. If the taxes were timely deposited see November 10.

Manufacturers, retailers and others file quarterly excise tax return for the 3rd quarter and pay the tax. If the tax was timely deposited see November 10. Use Form 720.

November

Employers should request the filing of a new income tax withholding exemption certificate, Form W-4, by each employee whose withholding exemptions will be different in 1961 from the exemptions claimed on last certificate.

November 10

Extended date for quarterly returns:

Employers who made timely deposits of income and social security taxes for the 3rd quarter, file 3rd quarter return. Use Form 941 or 941-T.

Manufacturers, retailers and others who made timely deposits of all excise taxes for the 3rd quarter, file 3rd quarter return. Use Form 720.

November 15

Employers liable for income tax withheld and social security taxes in excess of \$100 for the month of October must deposit such taxes with a depository. Form 450.

November 30

Manufacturers, retailers and others liable for more than \$100 of excise taxes for October must deposit such taxes with a depository. Use Form 537.

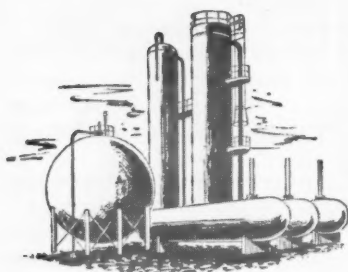
December

A corporation which meets certain requirements* may elect, at any time during the month, not to be taxed as a corporation for 1961.

December 15

Corporations must pay 2nd installment of 1960 estimated income tax which amounts to 25 per cent of total estimated tax.

Employers liable for income tax withheld and social security taxes in excess of \$100 for the month of November must deposit such taxes with a depository. Form 450.



industry news

Case study shows savings in gas heating over electric

A comparative study of two functionally identical schools—one heated by gas, the other, electricity—showed the gas system cost less to install and operate. The schools are in Angola, N. Y., five miles apart, near Lake Erie. Each was operated in its normal manner for the 1958-59 academic year. The heating season totaled 6859 degree days.

The gas-heated school's heating load requirements and weekly use schedules were higher than the electric. At night and over weekends, the electric-heated school's temperature was set back to 50 deg. while the gas school's was set at 60 deg.

Despite the fact that the gas-heated school was used 30 per cent more for non-academic purposes after class hours than was the electric school, the annual cost of heating with gas was \$3,008 as compared to \$6,140 using electricity.

The school board's records show a difference of \$6,500 in favor of the gas installation. It cost \$138,790, the electric system, \$145,291.

Copies of "Gas and Electric Heating in Two Schools at Angola, N. Y.: School Year 1958-1959" (Catalog No. 25a/U) are available from American Gas Assn., 420 Lexington Ave., New York 17, N. Y., at 15 cents each. Heavier stock (Catalog No. 25b/U) are 25 cents each.

Mobilization plan would include LPG dealers

Government defense mobilization planners are going to concentrate next on the fuel and energy industries. They've come up with a new "defense plan" to guide state and

local authorities in setting up systems to mobilize fuel and energy resources in any type of national emergency—from "extreme international tension" to a nuclear attack.

The plan calls for a series of meetings to start soon between the Office of Civil and Defense Mobilization, the Interior Department (which handles fuel and energy problems), state and local civil defense officials, and fuel and energy firm executives.

Purpose of the program is to recruit and train executives, including L.P. gas dealers, to take over "emergency management" of resources in such situations. They will be given assignments and locations to go to in event of an emergency. Then they would assess damage to fuel supplies, locate remaining supplies, and allocate (through priorities) the available fuels and energy resources.

While waiting for an emergency, the OCDM will use its fuels and energy mobilization organization to try to "insure adequate supplies to meet emergency needs." This side of the program could eventually mean government storage of some fuels or expanded production ca-

capacity under government loans or grants—if congress will put up some money.

Such programs have been conducted in the past for a host of industries. But many resulted in a glut of government stockpile materials, excess industrial capacity, or both. Congress now is a little wary of such programs.

"LPG carburetion" theme at Green's Fuel Convention

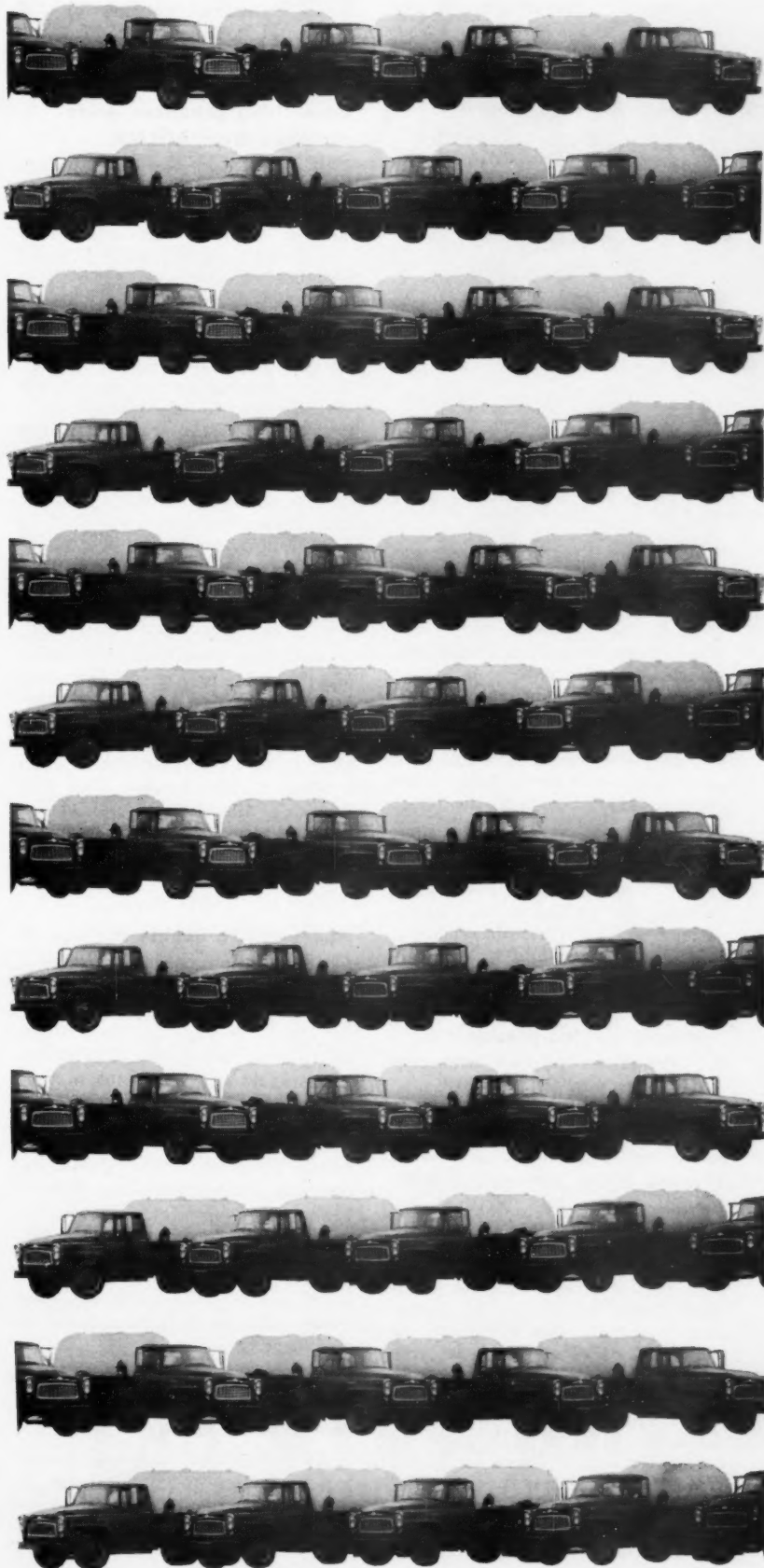
The Roosevelt Hotel in New Orleans was the convening point for the 1960 Annual Green's Fuel Distributors' Convention, June 13 and 14. Georgia, Florida and the Carolinas were represented by 160 attendants.

The first day of the convention took the group on an excursion to two Union Texas Natural Gas Corp. LPG processing plants at Eunice and Rayne. A stop was made at Anse la Butte where the conventioners toured UTN's underground storage and loading facilities.

LPG carburetion was the main theme of the convention and was discussed at the Tuesday morning business session. Tom F. Havens

This is part of the group of 160 attending Green's Fuel Distributors' Convention in New Orleans. The convention theme was LPG carburetion. The men were taken through processing plants and underground storage facilities for L. P. gas.





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NEEDS
FOR
FAST,
ECONOMICAL,
AND
DEPENDABLE
UNITS
ARE
BETTER
MET IN
A
TRINITY**



DELIVERY OR TRANSPORT

*The Only Units Built Exclusively
To Dealer Specifications*

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STEEL CO., INC.

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TANQUES DE ACERO TRINITY, S. A.





The 17 men pictured above represent the LPG industry leaders in Japan, according to E. E. Garnsey, vice president in charge of sales for Trinity Steel Co., Dallas. The Japanese industrialists toured Trinity's new Dallas fabrication plant on their American trip.

of International Harvester Co. spoke on "Appeal of L. P. Gas Carburetion to Fleet Owners." J. F. Krebs, Marvel-Schebler Products Division, Borg-Warner Corp., Decatur, Ill., discussed "Potential Load Building Through LPG Carburetion." An interesting and illustrated talk was presented on "Safety in LPG Carburetion" by C. D. Pritchard, director of the LPG Division of the Motor Vehicle Comptroller's office, State of Mississippi, Jackson.

Jamaica, British West Indies, was selected for next year's convention.

"Festival of Flame" exhibit to highlight AGA convention

Over 200 of the newest and most significant technical developments in gas utilization and industry operation will highlight the "Festival of Flame" exhibit at the American Gas Assn.'s 42nd annual convention, in Atlantic City, October 9-12. The "Festival" exhibit will occupy a 90,000 sq ft exhibition hall. (The Northeast LPG convention will be held simultaneously with the AGA convention.)

One hundred new developments by nearly 50 manufacturers and gas companies have been qualified and signed up for display. More than 20 gas utilization advancements and nearly 100 items of gas operating equipment are expected.

The gas utilization section will focus attention on new residential, industrial and commercial gas equipment and appliances which

have become commercially available since October, 1958, or which have become prototypes or field test models since that date.

Certain equipment categories—gas air conditioners, refrigerators, infra-red burners and disposers—are deemed so important that each manufacturer in these fields is invited to exhibit one of his latest models.

A "Festival of New Freedom Gas Kitchens and Laundries" will be exhibited plus a special gas "patio" showing the newest outdoor applications of gas, including cooking, infra-red heating and water heating.

Sylvester elected president of So. Propane's parent company

Albert L. Sylvester, Cohasset, Mass., has been elected president of Southern Gas & Water Co., successor by change of name to West Virginia Water Service Co. Election of officers took place at the company's annual meeting in Charleston, W. Va., in June. Also elected to office in the parent company was Southern Propane president James L. Harper of Jesup, vice president, who will serve on the board of directors along with Raymond H. Faxon of Milton, Mass., and several others.

The company's wholly-owned subsidiaries are Southern Propane Co., Jesup, Ga., and West Virginia Water Co. Southern Propane, distributor of L. P. gas and gas appliances, has over 50,000 customers in Georgia and Florida. West Virginia

serves industrial, commercial and residential consumers in 17 West Virginia communities.

Advertising practices guide available from AHLMA

Recommended advertising practices have been voluntarily and unanimously adopted by 20 home laundry appliance manufacturers who account for virtually 100 per cent washer and dryer production. The new code is consistent with recently published advertising guides of the Federal Trade Commission. Its purpose is to bring the highest degree of integrity to industry advertising and to help upgrade practices by manufacturers, distributors and dealers.

The manufacturers which make up the American Home Laundry Manufacturers' Assn. represent \$100 million worth of appliance advertising at the national and local levels through all media.

The National Appliance & Radio-TV Dealers Assn. and other appliance groups urge local dealers to use the guide as a model in tailoring recommended advertising practices. Copies of the new guide are free along with sections titled: FTC Guides Against Deceptive Pricing, Guides Against Bait Advertising, and Guides Against Deceptive Advertising of Guarantees. Write the Association at 20 N. Wacker Dr., Chicago 6, Ill.

Honeywell to double footage of Golden Valley controls plant

Minneapolis-Honeywell has begun work on a multi-million dollar, 227,000 sq ft plant addition, which will almost double the size of its temperature controls plant in Golden Valley, Minn. When construction is completed, July 1961, 1200 production employees will be transferred from two other plants, increasing employment from 950 to 2100.

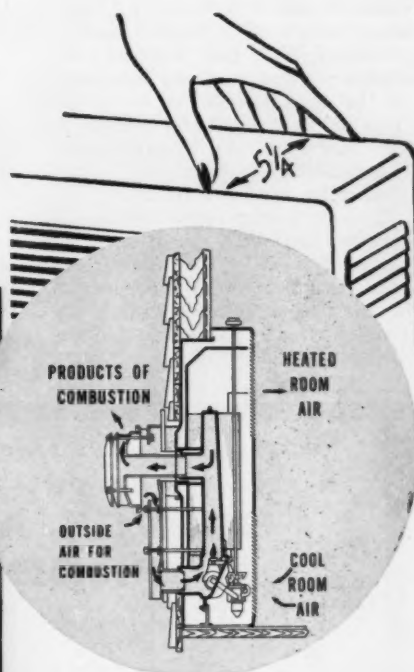
This addition, increasing the plants area to 500,000 sq ft, will make it the second largest in Honeywell's organization. It is exceeded by the 642,000 sq ft main plant in Minneapolis.

AGA reviews literature on infra-red energy

An evaluation of literature covering production and applications of infra-red energy by both gas and other means is presented in a publication issued by the AGA Labora-

MATCH ***SAF-AIRE***
SAFETY- SEALED

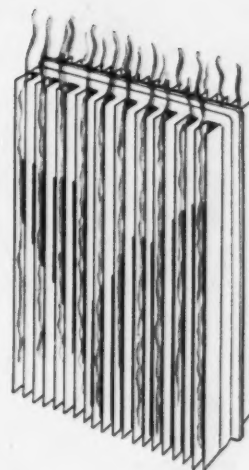
IF YOU CAN!



THE *ALL-GAS* HEATER WITH *ALL* THE FEATURES FOR BETTER, SAFER HEATING

The Saf-Aire Automatic Gas Heater is in a class by itself—no other heater offers so many sales-making features! No chimney, no ducts, no electricity needed...even if power fails, Saf-Aire continues to operate.

1. Tested and proved in 12 years of operation—250,000 in use today.
2. Does not use room air for combustion...no odors, no gases in room.
3. Approved for bedroom installation—the most critical test of safe operation.
4. Three kinds of control—manual, wall thermostat, Unitrol.
5. Modern built-in heater—recessed between the studs (not hung on the wall). Handsomely finished in two-tone enamel.
6. Heat exchanger is ceramic coated inside and outside for protection against corrosive effects of condensation.
7. Easily installed through a square hole.
8. Easy to service—loosening two screws permits removal of entire burner assembly.
9. Quiet—fins on heat exchanger prevent expansion noises.
10. Nationally advertised in shelter group magazines.
11. Complete assortment of consumer literature, window and floor displays, local advertising material.



THE ONLY GAS HEATER WITH A FINNED HEAT EXCHANGER

Saf-Aire heating surface is greatly increased by close-set fins, running full length of exchanger. Saf-Aire's vertical heat exchanger moves more air across hot surfaces—heats faster—heats better.

Symbol of
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Excellence

STEWART-WARNER
HEATING AND AIR CONDITIONING DIVISION

Dept. AT-80, Lebanon, Indiana

tories. Research Bulletin 83, "Literature Review of Infra-Red Energy Produced With Gas Burners" describes a research study sponsored by the AGA Committee on Industrial and Commercial Gas Research, as Phase 1 of PAR Project IA-14, "Investigation of Infra-Red Energy Production With Gas Burners."

Although infra-red burner applications have been in use for 20 years, interest in this energy has been rekindled with the production of the porous ceramic burner developed recently in Germany. Many questions occurred which hampered

the use of these new gas-fired infra-red burners.

For this reason, AGA felt that research was necessary to aid the industry and to strengthen the competitive position in industrial processing in using gas-fired infra-red generators. The bulletin covers the first phase of a study initiated at the AGA Laboratories in 1958.

Bulletin 83 presents the physics and mathematics of infra-red radiation and the types of I-R generators available. Present applications and comments on future possible applications which are meant to stimu-

late thinking on the use of I-R burners are covered.

Copies of Research Bulletin 83 are available from the AGA Laboratories, 1032 E. 62nd St., Cleveland 3, Ohio, for \$2 each (Catalog No. 35/IR).

Dearborn to market two new central heating units

Revised 1960 marketing plans have been announced by Dearborn Stove Co. as a result of the Dallas firm's recent purchase of Sequoia Manufacturing Co. (Acquisition of the San Carlos, Cal., manufacturer of gas-fired central heating equipment was announced in last month's Highlights.)

Dearborn president R. H. Norris emphasized that Sequoia fits the parent company's marketing program ideally with a full line of quality central heating products. Marketing of the new line of central heating and air conditioning equipment will start this year. Plans include two central heating lines under the Dearborn name. One a gas-fired gravity recessed furnace, is ideal for apartments, small homes, multiple units and zone heating in large homes. The other unit is a horizontal central heating unit, available in four models, which will fit on an attic platform or in crawl space under the floor.

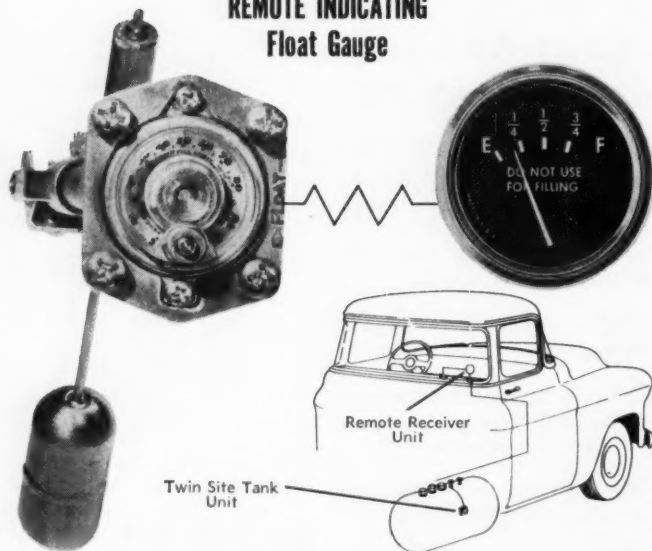
The central heating units are already designed to accept air conditioning.

The two Dearborn central heating units will be available through present regional offices and warehouses. Sequoia will continue its

FOR AUTOS AND TRUCKS USING LP-GAS ROCHESTER OF TEXAS SOLVES AGE-OLD PROBLEM

Twin Site

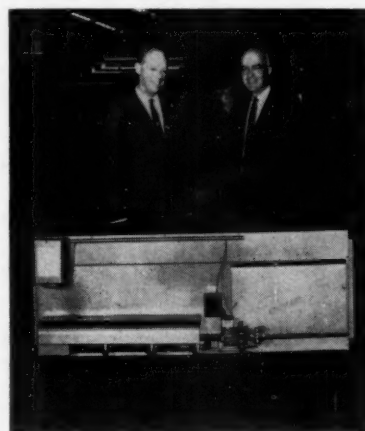
REMOTE INDICATING Float Gauge



- Constant liquid-level reading on tank and instrument panel
- Allows switching of saddle tanks or from LP gas to gasoline before power loss occurs.
- Easy-to-read, fogproof dial
- Flutterless pointer
- Replaceable dial-transmitter capsule.

FOR COMPLETE INFORMATION WRITE TO

ROCHESTER GAUGES, INC.
OF TEXAS
2425 CAROLINE DALLAS, TEXAS



Here, Sequoia president H. R. Kramer (l.) and Dearborn president R. H. Norris pose with part of Sequoia-made gas heating equipment. Plans include marketing of two central heating lines under the Dearborn name.

"WEIGH" OUT IN FRONT



**ANCHOR CAN
SUPPLY YOUR
LPG NEEDS...**

DEPENDABILITY







Anchor weighs facilities against your needs for top service and gas, and the result is absolute dependability. Manufacturing, transportation and storage are of the most modern and extensive. LPG quality is the best. And Anchor men are truly expert in your problems. You'll be "weigh" ahead, whatever your LPG needs, when you talk contract with Anchor. Call right now.



Now Celebrating 20 Years of Service to the LPG Industry . . .

ANCHOR PETROLEUM COMPANY • TULSA

Facts for LP-Gas Jobbers...

-  LP-Gas Jobbers buy direct from Pure Oil—producer of its own LP-Gas.
-  PURE ships promptly in any weather in its own tank car fleet, or by transport truck.
-  PURE owns many sources of LP-Gas to insure jobbers of a steady supply; and PURE's production capacity continues to increase.
-  PURE's huge underground storage facilities assure you a supply of LP-Gas when you need it most.
-  Rigidly-maintained quality of PURE's LP-Gas guarantees customer satisfaction.
-  PURE's sales representatives will assist you with business-building ideas.

Why not start now to do business with a supplier whose reputation and performance strengthen yours. Call or write the Pure Oil office nearest you. Do it today.



**BE SURE
WITH PURE**

The Pure Oil Company, 35 East Wacker Drive, Chicago 1, Illinois • Worland, Wyoming, Box 38 • Minneapolis, Minnesota, 825 Thornton Street S.E. • Fort Worth, Texas, Fair Building, Box 2107.

News (cont.)

own marketing operations under the Sequoia name.

H. Robert Kramer, one of Sequoia's founders, will act as president of the new Dearborn subsidiary. No personnel changes will occur as a result of the merger.

NEWS BRIEFS

Whirlpool Corp. has formed a new department to carry on and expand management and operations training for wholesale distributor personnel. "Establishment of this new department formalizes a program begun as a series of distributor management seminars in 1959," says Jack D. Sparks, vice president, RCA Whirlpool appliance sales. He added that eventually the distributor development department will expand to include a program of management training, assistance in solving operational problems, and a medium for the exchange of information between distributors. Robert P. Lewis, recently consumer relations director, will head the new department as manager.

Gabe Marin, president of Sun-Ray Oil Burner Manufacturing Co., Jamaica, N. Y., was the winner in Minneapolis-Honeywell's 75th Anniversary "Win-A-Wagon" contest. The prize was a full-size working replica of a 1901 Oldsmobile. Object of the contest was to guess the number of times a torture test model of the new Honeywell R478 electronic flame safeguard would cycle before it was arbitrarily stopped at the end of the contest period. Marin guessed it would cycle 243,821 times, just 11 cycles more than 243,810 cycles at which the device was stopped.

Two safety awards of merit, in recognition of 1,248,000 man-hours of perfect safety, were presented to The J. B. Beaird Co., Inc., Shreveport, La., by the National Safety Council and Liberty Mutual Insurance Co. at a recent employee open house. The open house included a plant tour and a review of safety displays for the employees and their families.

California Liquid Gas Corp. purchased the assets of Gholson L. P. Gas Service, Mt. Home, Idaho. The new company name will be Idaho Gas

USS "T-1" Steel tankers help cut rates 10%

"No other metal on today's market does the job as economically and efficiently as USS 'T-1' Steel in our LPG carriers," says Mr. John T. Peirick, Director of the LPG Division of Producers Transport, Inc., New Buffalo, Michigan.

"P.T.I. covers the entire midwest and east coast. Since we purchased the first 'T-1' Steel tanker in 1954, our fleet of fifty tankers has been completely converted. The new carriers weigh 4,000 lbs. less than the old units, but carry 4,700 gallons more propane," reported Mr. Peirick. "This boosted our delivery capacity 102% and the reduced dead weight cut transportation cost.

"We have trucks on the road day and night, seven days a week. Averaging two trips a day, each carrier logs a minimum of 75,000 miles a year. The old units, with smaller payloads, would have to make twice as

many trips to handle our deliveries. About this same time legal load limits were raised in the midwest states," explained Mr. Peirick, "which increased our earnings per mile.

"The savings resulting from these efficient new carriers and the increase in allowable gross vehicle weights were passed along to our customers as a 10% rate decrease. We expect to reduce our costs further with additional 'T-1' Steel carriers as they are needed."

USS "T-1" Constructional Alloy Steel has a minimum yield strength of 100,000 psi. This permits design to high working stresses. That's why you can get such large payload increases. Take advantage of "T-1" Steel's strength and weldability. Contact our nearest sales office or write United States Steel, 525 William Penn Place, Pittsburgh 30, Pa.

USS and "T-1" are registered trademarks

This 11,000-gallon LPG tanker made of USS "T-1" Steel at 82% capacity, hauls 102% more payload and weighs 4,000 lbs. less than older units. It was built by J. B. Beaird Company, Shreveport, La.

United States Steel Corporation—Pittsburgh
Columbia—Geneva Steel—San Francisco
Tennessee Coal & Iron—Fairfield, Alabama
United States Steel Supply—Steel Service Centers
United States Steel Export Company
United States Steel



This mark tells you
a product is made of
modern, dependable Steel.



Co. Valley Propane Service, Nampa, Idaho, was also purchased by California Liquid Gas. The company name will remain the same and Dick Fletcher, former owner, will continue as manager.

A major contribution of the 1960 PAR Public Information Program of the AGA to add to gas industry prestige is a colorful section of The New York Times (June 19, 1960 edition). The section, telling the gas industry story, is presented in editorial fashion, carrying "how-it's-done" pictures. The supplement reached from two to three million homes throughout the U. S.

A home builder sales kit for contractors who want to expand their hydronics business in the new house market is now available from the Better Heating-Cooling Council. The kit is designed to prove to the home builder that hydronics will help sell homes faster and at a greater profit to him. The package contains a program with a new approach for selling the home builder. It can be used in a team approach to the builder by the contractor and a distributor and

manufacturer's representative. The kit sells for \$1.60 and includes the selling guides, a 60-page handbook, sample baseboard sticker, and three sample pieces of literature. Write to the Better Heating-Cooling Council, 250 Park Ave., New York 17, N. Y.

"Safety . . . Everywhere . . . All the Time" is the National Safety Council's slogan of a new continuing campaign, aimed at making safety an around-the-clock family affair. It will save industrial firms from conducting separate on-and-off-the-job safety campaigns. The campaign symbol is a black circle within a yellow diamond. Kickoff for the campaign is a 23-minute full-color film. Reminder items available to employees are key-tags, posters, leaflets, pocket protectors, safety scoreboards for plant and home. For further information and suggestions as to how to start a campaign, write the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Name the Honeywell Mermaid and win a trip to Jamaica for one week, with expenses paid for two, during

October. This is the big prize offered in Honeywell's third contest of 1960 designed to help dealers sell more and better water heaters. For more information write "Put Yourself in Hot Water," P. O. Box 431, Chicago 77, Ill.

Brown Stove Works Inc., Cleveland, Tenn., in mid-June announced the appointment of the Adams-Allison Co., Atlanta, Ga., to handle its advertising and sales promotion program.

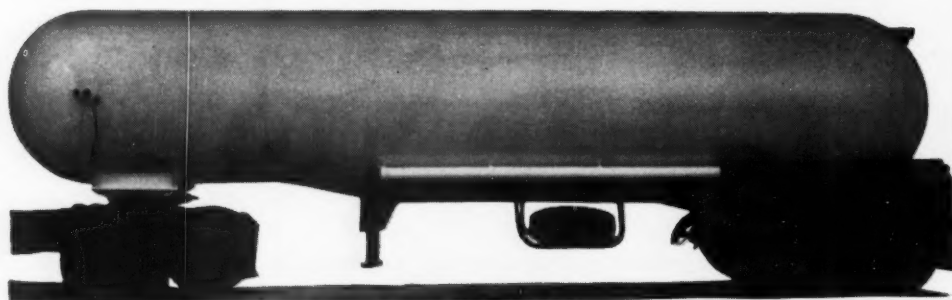
Dean Distributing Co., Inc., Portland, Ore., has been awarded the distributor franchise for Hamilton Manufacturing Co. automatic washers and clothes dryers in Oregon and Washington.

Hal's Gas Service Inc., Waterville, N. Y., has filed incorporation papers. The company sells both LPG and gas appliances.



**FOR
SALE**

Reconditioned Propane Transport



LESS THAN 1/2 ORIGINAL PRICE!...REAL BARGAIN AT

Here's a Propane Tank that's ready to go to work for you NOW! Perfect unit in all states where 32,000 lb. gross on tandem is legal. Designed for tandem tractor.

\$5,975⁰⁰

GENERAL SPECIFICATIONS

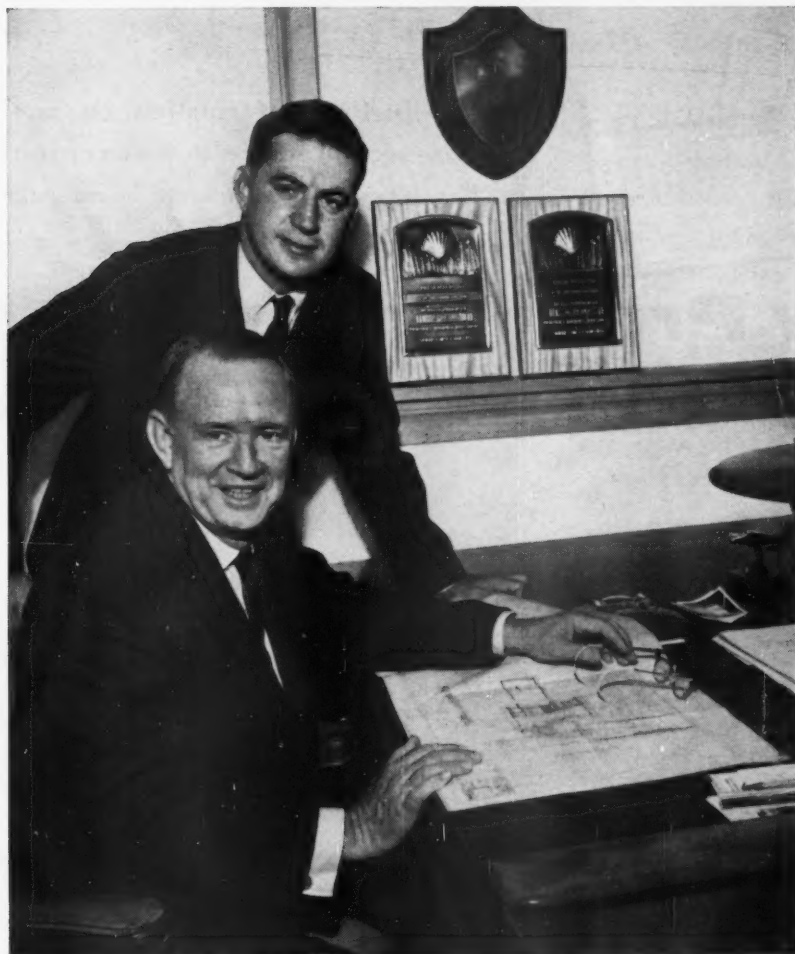
- 9,000 Gallons (water level)
- Working Pressure —265 P.S.I.
- I. C. C. MC330
- Air Brakes
- Spoke Wheels
- 10/20 Roadable Tires
- Tri-Cover Manhole



Call or Write: Bob Costello

FRUEHAUF TRAILER COMPANY

5330 W. 47TH STREET • CHICAGO 38, ILLINOIS • LUDLOW 5-5600



Meet A. R. Blossman, Sr. and Jr.

"Fred" Blossman, Founder-President, Blossman Hydratane Gas, Inc., Covington, La.

"Skeets" Blossman, Vice-President, pilot and executive board member

25 years a Shell LP-Gas Jobber—with a perfect delivery record

Heading up one of today's largest LP-Gas operations in Dixie is a far cry from Fred Blossman's early days. His first five years were a struggle . . . included everything from policy making to truck dispatching. And it really paid off for Fred—he acquired over 1000 satisfied customers. Of course, by this time, he had become a contract customer himself—for Shell Propane. But this was only the beginning.

Reminiscing about his 25-year association with Shell, Fred says: "Shell has always maintained the wise policy of contracting to sell propane only within its capacity to supply. This policy has certainly paid off for me—a 100% delivery record from Shell—and for my customers, too. As for Shell service—you simply can't beat that either!"

Today, the Blossman organization

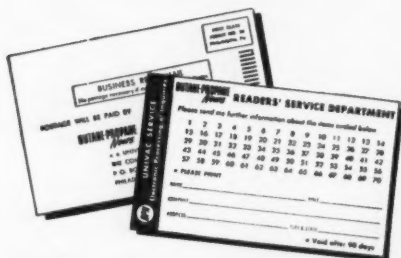
boasts of some 40,000 customers in two states, who are served over 20 million gallons of LP-Gas annually. He has more than 250 employees and operates a fleet of 168 vehicles (equipped with two-way radios) from 24 Blossman distribution plants. Fred, too, is justly proud that his home town of Covington chose to give him its "Outstanding Citizen Award" in 1953.



It pays to be a Shell LP-Gas Jobber

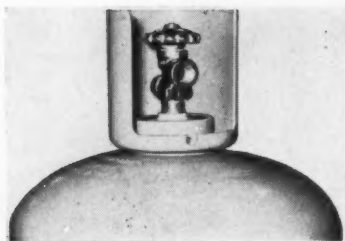
—and your nearest Shell office will be glad to tell you why. Ask for the District Manager





For further information on any items in this section use the convenient Univac Readers' Service postcards on pages 89, 90.

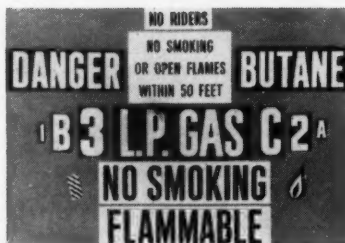
New Products and Free Literature



Cap protects cylinder valves

Circle 1 on Readers' Service Card

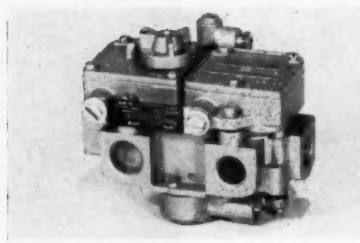
Protection of cylinder valves, particularly needed on construction jobs, is provided by a cap (GEC 820) which screws directly onto the threaded neck of the cylinder. Pressed Steel Tank Co.



Decals apply in seconds

Circle 3 on Readers' Service Card

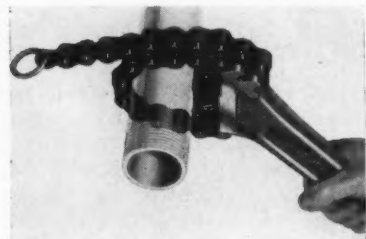
Pressure-sensitive identification and safety decals (GEC 710) go on in seconds and stay on for years. They meet state regulations, and are ideal for all equipment, glow when light hits them. Wetmore Co.



Combination valve reduces piping

Circle 5 on Readers' Service Card

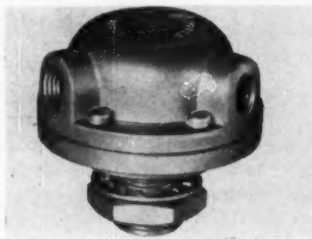
Piping is reduced to a minimum with "Midgitrols" (GEC 820) combination valves for trailer and home. Midgitrol is four valves in one; power is furnished by a pilot generator. General Controls Co.



Chain wrench grips without crushing

Circle 2 on Readers' Service Card

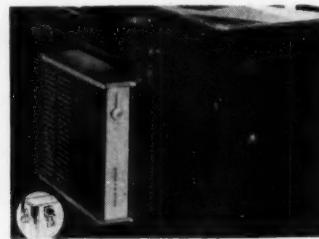
Chain wrenches for work in extra tight quarters, feature ratchet-like action in either direction and from either side. The wrenches (GEC 770) tightly grip any shape without crushing it. Ridge Tool Co.



Filter contains built-in magnet

Circle 4 on Readers' Service Card

Low-profile, large-capacity filter (GEC 350) designed especially for fork lifts, incorporates bulkhead fitting into filter base. Built-in magnet attracts iron oxide, preventing its getting into solenoids. Algas.



Deskside intercom offers more space

Circle 6 on Readers' Service Card

An optional bracket attachment with this intercom (GEC 140) offers more desk work space. The intercom may be placed on the side of a desk, a table, or on a wall for office and industry. Talk-A-Phone Co.



With fuel, labor, and other costs going up, one of the best ways for an LP-GAS dealer to increase profits selling fuel in bulk is to improve the efficiency of his unloading operations. Several manufacturers who supply this industry are co-operating to this end.

DELIVER 1,000 GALLONS TO YOUR CUSTOMERS' TANKS IN 17 INSTEAD OF 34 MINUTES

Cutting the loading and unloading time in half may well increase your net profit per truck to 400%. Based on figures published a couple of years ago, and assuming that you can increase your deliveries by 50% due to the above speed-up (without adding new equipment or more overhead) watch what happens to the net profit.

	Present Delivery Rate	Speeded-up delivery and increased volume
Gross sales of L.P.G. . . .	\$65,000	\$104,000
Cost of sales (Gas)	— 40,000	— 64,000
GROSS PROFIT	\$25,000	\$ 40,000
Delivery Expense	— 11,400	— 11,400
General Overhead	— 8,600	— 8,600
Net Profit Per Truck	\$5,000	\$ 20,000

You can insert your own figures in place of the ones shown and see for yourself how your net would be affected by a 50% increase without a change in delivery and general overhead expense.

Valve manufacturers have come out with new filler valves for consumer tanks that allow 60 GPM fill rates. Meter manufacturers have new 1½" meters to take up to 60 GPM. Vapor space filling to cut down back pressure in consumer tanks has been developed. It has remained for a pump manufacturer to come up with a practical high-pressure, high-volume pump that will double delivery rate with minimum of added cost, low upkeep, etc.

Practical Pump Found

In searching for the best way to solve this problem, engineers of the Smith Precision Products Company investigated many new types of de-

signs including multiple-piston, heavy vane, 2-stage turbine and worm screw designs, but after careful study found the ideal solution right in their own stock in the TC-3 pump.

TC-3 Pump

The TC-3 was originally designed for large transport trucks, and service records show a pumping average of 10,000,000 gallons between factory overhauls. The delivery rate (100 GPM at 500 RPM) would be too high for the 60 GPM requirements, but when this pump is operated at slower speeds (300 to 400 RPM) delivery will be just right, service life will be longer because of the lower RPM, and operating noise less. To better

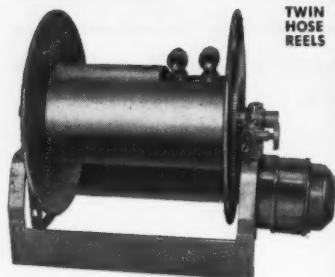
adapt the TC-3 to the new high pressure services, gear and bearing materials, as well as the pump case, have been strengthened to give added safety factor. The TC-3 is not a new design so has no "bugs" that haven't already been found and removed. It develops excellent efficiency.

Recommended Installation

Inlet piping for the TC-3 (when pump is operated at 400 RPM or less, for 60 GPM output) can be 2½". Use Rego 7539FR excess-flow check valve in tank liquid outlet, 2½" angle or globe shut-off valve (or 2" if straight-through valve, such as Okadee) and a 2½" strainer. Pump may be operated in either direction (or both directions) of shaft rotation, has four optional inlet and outlet ports to make piping easy. Bypass valve, 1½" set 125 lbs. and piped to return to truck tank(s). The TC-3 is available in either Underwriters' Approved or "regular" models. **THIS PUMP IS A NATURAL FOR DEALERS INTERESTED IN IMPROVING THE EFFICIENCY OF THEIR DELIVERY TRUCKS.** Buy a new TC-3, or have your TC-2 pump converted to a TC-3 at the factory at lower cost.

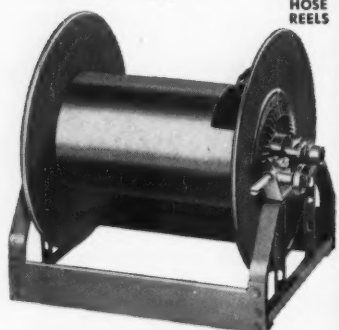
Write to Smith Precision Products Company, 1135 Mission Street, South Pasadena, California, for new 20-page booklet on "How to Speed Up Fuel Deliveries." No obligation.

ardmore HOSE REELS



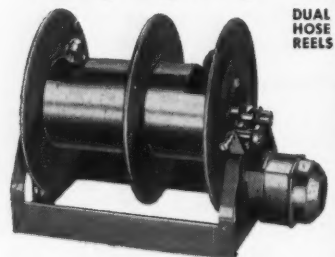
TWIN
HOSE
REELS

every type



SINGLE
HOSE
REELS

every capacity



DUAL
HOSE
REELS

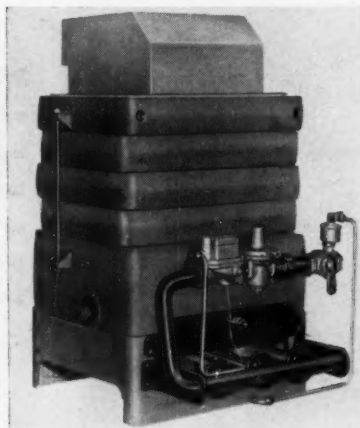
in hand wind and power drive

When you order hose reels, specify "Ardmore"... for quality, proper performance and years and years of trouble-free service. Complete choice of types and capacities to meet your exact need.

ARDMORE PRODUCTS

1855 Shermer Road
Northbrook, Illinois
Eastern Office: 612 Commerce Road
Linden, New Jersey
International Sales and Service

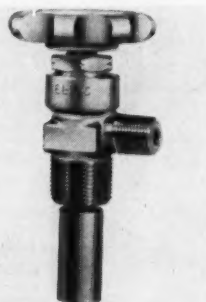
Write for Bulletin 101



"Mighty midget" boiler rated higher by AGA

Circle 7 on Readers' Service Card

Features of the re-designed "mighty midget" boiler (GEC 420) include staggered water passages to extract maximum heat; slotted-type, instead of drilled, ports and three one-piece cast iron burners; mixture throat and burners are in one piece. These features brought high AGA rating. Peerless Heater.



Direct connection of quick coupling

Circle 8 on Readers' Service Card

This cylinder valve (GEC 820) permits direct connection of a quick coupling for fork lift trucks. Excess flow check is part of the valve as a safety feature to prevent accidental discharge of gas should the connection break. Selwyn-Pacific.

Compact pressure regulator constructed of die-cast zinc

Circle 9 on Readers' Service Card

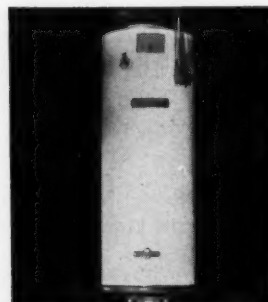
A low-cost pressure regulator (GEC 700), constructed of die-cast zinc, may be used as a two, three, or four-way regulator. It's available in 1/4 in. sizes only. Internal parts are of brass and the diaphragm and disc of oil-resistant BUNA-N. Watts Regulator Co.



Sealed vent gas heater installs in a window

Circle 10 on Readers' Service Card

This gas heater that installs in a window operates with a sealed burner, in which the gas flame and pilot burn in a chamber away from room air. The heater (GEC 420) has a capacity of 20,000 Btu, and measures 10 x 18 x 26 in. It may be removed when desired. H. C. Little Burner Co. Inc.



One gpm recovery claimed for 40-gal. water heater

Circle 11 on Readers' Service Card

This automatic, 40-gal. storage-type water heater (GEC 860) delivers 127 per cent more hot water per hr than comparable units. The Hotstream J-40 has a recovery rate of more than 1 gal. per min at 100 deg. rise. It measures 64 in. high and is suitable for home and commercial use. Hotstream Heater Co.

Phenolic paint stops rust

Circle 12 on Readers' Service Card

Formula L-122 stops rust on cylinder foot rings and other areas where surface preparation is impossible. A plasticized phenolic paint (GEC 610) it resists chemicals, acids, earth organisms and bacteria and does not oxidize. Spatz Paint Industries.

For further information on these products use the Univac Readers' Service postcards on pages 89, 90



**Burner bowls removable
for easy cleaning**

Circle 13 on Readers' Service Card

Clean styling, easy to use control panels, and oversize oven door windows are features of this free-standing gas range (GEC 240). The roast guide gives automatic roasting by dialing the weight and type of meat, the clock control does the rest. Chrome plated burner bowls are removable for washing. Waste King Corp.



**Heater combustion air
taken from outside**

Circle 14 on Readers' Service Card

Safety is the idea in this Martin Duo-Vent wall heater (GEC 420), since combustion air is taken from the outside rather than inside. Venting is straight through the outside wall, eliminating venting of the wall and roof. The heaters are finished in lifetime porcelain enamel, and can be used as a table top. Martin Stamping and Stove Co.



**Gas dryers carry
multiple features**

Circle 15 on Readers' Service Card

Automatic gas dryers (GEC 120) feature twin air streams, three-cycle rotary timer with separate cycles for a variety of materials and a no-heat air setting. They have a zinc-bonded tumbling drum and double-pass lint control. Carry a one-year parts warranty. Matching gas washers are available. Hamilton Manufacturing Co.

Enterprise

"Uni-Weld" (one-piece) Construction



No rattles . . . Not ever! One piece, "Uni-Weld" frame eliminates rattles! No bolts, no screws to shake loose! Enterprise is sturdier . . . lifetime built!

- Same top quality construction . . . all models!
- Rust-proof porcelain finish, inside and out!
- Backguards with interchangeable colors!
- FREE FLOOR PLAN!
- Generous co-op advertising!



Get full details on the Enterprise range line . . . your money-maker with the features that SELL! Write for new 1960 catalog!

**PHILLIPS & BUTTORFF
CORPORATION**

Nashville, Tennessee . . . Since 1858



the
"Pre-Vent"
by TEMCO

*America's most beautiful,
most wanted, most practical
thru-the-wall gas heater*

Here's why:



STYLE—for today's finest homes
—gleaming cabinet of handsome,
contemporary design.



OUT FRONT CONTROLS—
easy access to the finest in con-
trols, Minneapolis-Honeywell.



**CERAMICLAD HEAT EX-
CHANGER**—a TEMCO exclu-
sive—warranted against rust and
burn-out—standard equipment
on the "Pre-Vent"



SAFE—hermetically sealed—no
flue or chimney needed—uses
only outside air for combustion.



PROFITABLE—dealers report
less service calls on the TEMCO
"Pre-Vent" than on any other
thru-the-wall gas heater.

Sell

TEMCO



and you sell everybody!

TEMCO, Inc.

NASHVILLE 9, TENNESSEE

"Gas Heating Specialists for the Nation"

Mail this coupon for name of your nearest
TEMCO distributor!

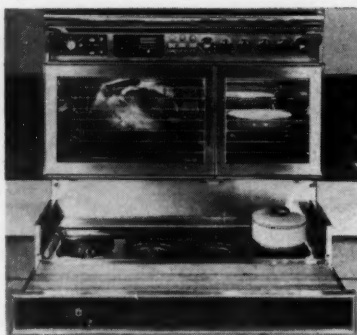
TEMCO, Inc., Dept. BP, Nashville 9, Tenn.

NAME _____

STORE _____

ADDRESS _____

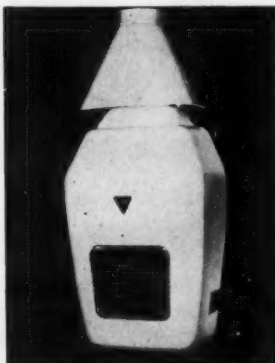
CITY & STATE _____



Compact range mounts on cabinet or wall

Circle 16 on Readers' Service Card

A compact 40-in. range may be mounted on a metal or wood cabinet or hung on the wall. The eye-level control panel houses controls for the oven, broiler and burners as well as the thermostat, automatic clock, roast control and rotisserie. The range (GEC 240) includes an all-chrome oven, separate "grill-a-vater" broiler and four top burners. The Tappan Co.



Wall-mounted boiler saves housing space

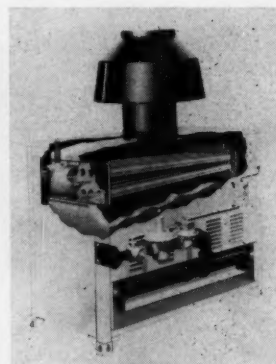
Circle 17 on Readers' Service Card

For space-saving in split-level, ranch or duplex construction, the Ascot No. 924 hydronic boiler (GEC 420) is wall-mounted. It features a combination valve which incorporates the automatic pilot, automatic main valve and pressure regulator in one compact unit. Ascot Gas Water Heaters Inc.

Hand cleaner has dispenser

Circle 18 on Readers' Service Card

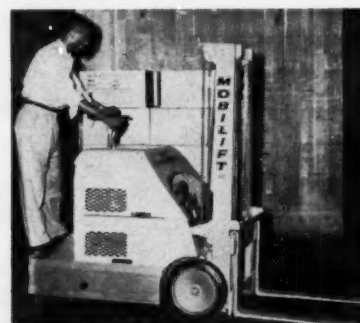
Little Doc Disolvit, a paste waterless hand cleaner (GEC 500) removes oil, grease, paint, ink, tar, shellac and asphalt. The 100-oz container may be mounted with a dispenser in its wall bracket anywhere and costs less than \$5.00. Schaffner Mfg. Co. Inc.



Non-ferrous waterways reduce boiler corrosion

Circle 19 on Readers' Service Card

This commercial boiler has four-pass heat-exchangers that send water at high velocity through three 1-in. copper fin tubes in an "over-back, over-back" pattern. Damage to the boiler (GEC 410), caused by lime and corrosion, is highly reduced because of its all-copper waterways. It operates at 160 psi with in-put ratings from 800,000-to-2½ million Btu. Raypak Co. Inc.



Stand-up fork lift maneuvers easily

Circle 20 on Readers' Service Card

Stand-up fork lift truck (GEC 530) has zero inside turning radius, 360 deg. steering with three cylinder L. P. gas engine. It features easy maneuverability, economy, and low maintenance. Minneapolis-Moline Co.

Aluminum pump saves 139 lb

Circle 21 on Readers' Service Card

A four-inch rotary pump (GEC 660), offered in iron or aluminum has a nominal capacity of 300 gpm. The aluminum model weighs 86 lb, as compared to 225 lb in nodular iron. Model LG4, offered as a truck pump and a base mounted unit (iron) has helical gear drive, for bulk plant service. Blackmer Pump Co.

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or to get the Trade Literature offered . . .

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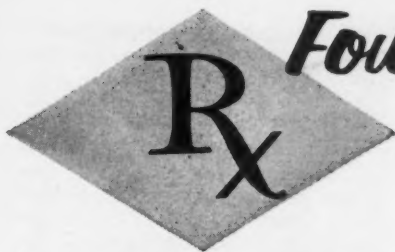
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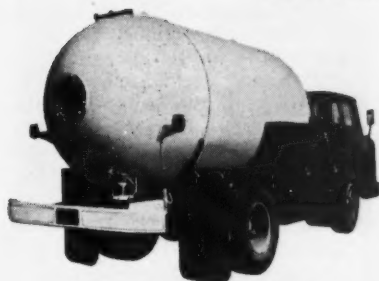
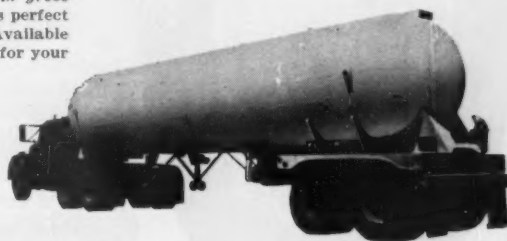
Four Cures for Obsolitis*

***A serious malady affecting owners of obsolete delivery equipment.**

Here are four sure ways to cure obsolitis, the dangerous "affliction" that may be cutting into your profits. If your equipment runs up heavy repair bills each year, or carries less payload than you need for maximum profit, here's good news for you: The Mississippi Tank line is designed with your transportation problems in mind. No matter what you seek in L-P Gas equipment . . . top payload . . . faster pumping . . . economy . . . durability . . . there's a Mississippi Tank model to fit your needs. You're losing money every day you operate obsolete equipment, so contact Mississippi Tank right now about your requirements.

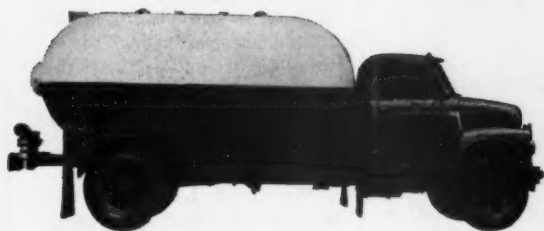
T-1 LOAD-KING TRANSPORT

Extra payload and strength at no increase in gross weight in this model. Exclusive design assures perfect weight distribution and maximum loading. Available in 7,600 to 11,000 w.g. capacities custom built for your area of operation.



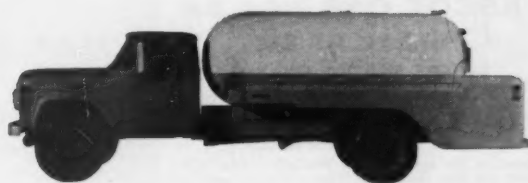
T-1 TITAN

Its extra capacity—3,075 w.g. on a single 18,000-lb. axle enables the Titan to pay for itself in a matter of months. Lightweight T-1 steel construction, 76 1/2" inside diameter tank, fully X-rayed and sand blasted.



TITAN, JR.

2,600 w.g. capacity—weighs less than 23,000 lbs. loaded! The secret is Mississippi Tank perfect-balance design. 72" inside diameter tank, fully X-rayed and sand blasted.



ATLAS DELIVERY

Quality designed and precisely balanced for maximum payload capacity at low cost. Finished with many deluxe features you'd expect to find only in higher-priced models. Capacities: 2,000 to 2,400 water gallons.



MISSISSIPPI TANK COMPANY

INCORPORATED

Hattiesburg, Miss.

JUniper 3-0262

Mail coupon for literature on the latest in profit-designed equipment

MISSISSIPPI TANK COMPANY, Inc.
Hattiesburg, Miss.

BPN-8

Without obligation, RUSH literature on:

- ☐ T-1 Steel Transports
- ☐ Delivery Units
- ☐ Domestic and Bulk Storage Systems

Name

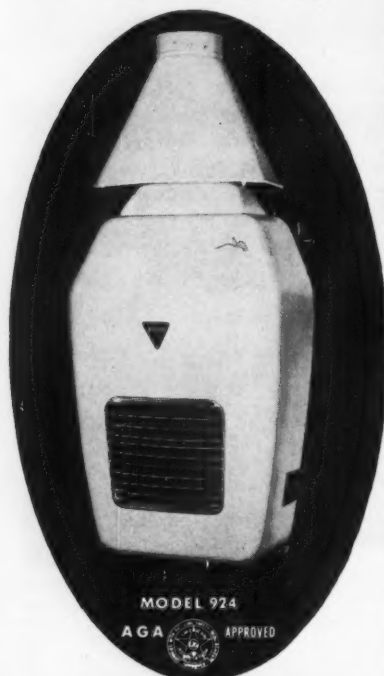
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Address

City and State

ASCOT

the boiler
that mounts on the wall
... out of the way



NEW!
ASCOT GAS BOILER

**PUTS PROFIT BACK
in HOT WATER HEATING**

*Hydronic heat for the home?
Hot water for a commercial job?
... then consider ASCOT*

Consider the space saving flexibility, low initial cost, one man installation, high efficiency and lack of maintenance.

Ascot is built and priced to bid even against budget warm air systems...and still build a profit for you!

EASILY INSTALLED—light weight
— one man can do the job.

EFFICIENT — AGA rated, now
available up to 120,000 BTU's.

FULLY AUTOMATIC — featuring
BASO & PENN Controls.

QUIET — Ribbon flame burner for
quiet combustion.

INSTANT HEAT — response at ra-
diators within 30 seconds.

ECONOMICAL — ASCOT cuts in-
stallation costs and eliminates
call backs.

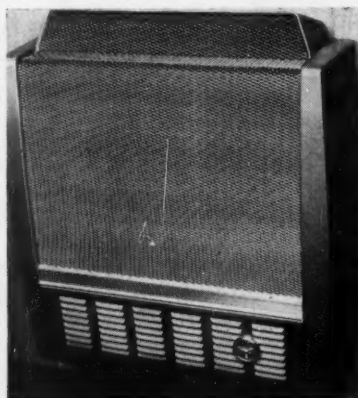
ASCOT is backed by 25 years of heater ex-
perience in North America and Europe.

Write for FREE literature

ASCOT
GAS WATER HEATERS, INC.
222 W. Pittsburgh Ave., Milwaukee 4, Wis.

SOUTHERN STATES: Southern Heater Co., 844 Baronne St., New Orleans
PACIFIC COAST: Equipto Sales, Inc., 1238 N. W. Glisan St., Portland

A Radiation Company with offices in
London, Sydney, Montreal and Milwaukee



**Through-the-wall heater
occupies little space**

Circle 22 on Readers' Service Card
Pre-Vent gas heater (GEC 420)
gives the safety of a hermetically
sealed unit and through-the-wall
vent, for small room heating. The
unit measures 7¼ in. thick, 24 in.
high and 22 in. wide. Models of
10,000, 20,000 and 30,000 Btu are
available. Temco Inc.

**Torch's flame spreader
provides uniform flow**

Circle 23 on Readers' Service Card
The "Waikiki" gas torch (GEC
470) has a stainless steel flame-
spreader for uniform flow, heavy
steel construction and a weather-
proof finish. The torch measures
11 by 1½ in. Arkla.

FREE LITERATURE

Sharp Flame hand torch

Circle 24 on Readers' Service Card
Specifications and prices of the
sharp flame hand torch (GEC 780)
are described in Bulletin PM-E 59.
The literature illustrates a cut-
away view of torch construction,
the flame range and the holder.
Bethlehem Apparatus Co.

Aluminum case L.P. gas meter

Circle 25 on Readers' Service Card
The American AL-110-LPG Alu-
minum case L. P. gas meter is de-
scribed in detail in Bulletin 307.
The meter is rated at 110 cfh pro-
pane, 5 psi working pressure and
designed for medium sized homes
and small commercial loads. (GEC
560). American Meter Co.

Valves description, application

Circle 26 on Readers' Service Card
P-K Paul Control valves, hose
valves and Ludeman rotolow valves
are all described in a two-color
bulletin No. GV 101. The booklet
includes introductions, operating

features, mechanical operation, flow
charts and specifications. General
Kinetics Corp. (GEC 820.)

Mirth-provoking Laugh Book

Circle 27 on Readers' Service Card
For those who make an occa-
sional speech or address, the pocket-
sized Laugh Book is of particular
value. Included are cartoons by
famous artists and "heard in the
locker room" jokes by Precision
Equipment Co. (GEC 450.)

Standard and custom clamps

Circle 28 on Readers' Service Card
Illustrations and condensed in-
formation on the standard Wittek
clamp line (GEC 430) including a
few of the custom-made types are
contained in a 16-page, three-color
booklet. Wittek Manufacturing Co.

Community relations programs

Circle 29 on Readers' Service Card
Methods for setting up commu-
nity relations programs that work
are described in "Building Success-
ful Community Relations." The
booklet (GEC 450) points out the
need to build a better community
and tells how businessmen can get
into this activity. Cities Service.

CORRECTION

The May issue of BPN car-
ried an article, "LPG Makes
Deliveries Soft for Softee,"
wherein it was stated that
the equipment for the con-
version of Softee trucks was
furnished by J & S Carbure-
tor.

We erred. Karl F. Deck,
service sales manager for Ze-
nith Carburetor Division,
Bendix Corp., writes as fol-
lows:

"The entire Softee engi-
neering was handled by our
Mr. Charles R. Meyers, east-
ern representative, and Mr.
Ray Landis of the John E.
Landis Co., Lancaster, Pa.
The equipment that has been
presently supplied has been
billed through our distribu-
tors, John E. Landis Co. . .
and Motor Ignition Co., Phil-
adelphia.

"In addition, we have sold
several hundred carburetor
assemblies to the D. W. Onan
Co. for application to the
engines supplied by Mr.
Softee."



F. T. LUNDIN—from sales manager of the Eastern Division of The Dri-Gas Co., Hinsdale, Ill., to vice president of sales. FRANK DRAGON, formerly Eola, Ill. district manager; and ROBERT SWAN, formerly Lafayette, Ind. district manager; are new co-sales managers to work under Lundin.



F. T. Lundin
Dri-Gas Co.



A. Christiansen
Day & Night

AL CHRISTIANSEN is the new district manager, headquartered in Fort Worth to manage sales of water heating, heating and air conditioning for Day & Night Manufacturing Co., La Puente, Cal.

GEORGE ZIMMERMAN succeeds Charles Ruelle as service manager for Hamilton Manufacturing Co., Two Rivers, Wisc. DON KASSNER replaces Zimmerman as product service engineer. A. J. BERKEY is in the newly-created position of adjustment supervisor for product service.

RALPH R. MENDELSON, who has served in various administrative capacities for Hotstream Heater Co., is new executive vice president, to head all executive and divisional heads of manufacturing, sales and administrative programs in Cleveland.

GEORGE L. FREELAND, JR. is sales representative in the Denver area for Janitrol Heating and Air Conditioning, under the direction of W. R. Egan, western regional sales manager.

CUT COSTS

Use Viking LP-Gas Pumps

to handle your fall and winter demands

You cut costs because Viking supplies the right size and type of pump for efficient operation on every job. No compromising applications.

Truck mounting pumps come in three sizes—28, 38 and 70 G. P. M. Bulk plant pumps come in twenty models, to meet every need. Fueling and bottle filling pumps in 5, 10, 20 and 30 G. P. M. sizes.

You cut costs, too, by having longer pump life and full capacity operation because of the many exclusive Viking features . . . "automatic pressure lubrication of idler bearing, automatic return-to-tank valve, the original Viking "gear-within-a-gear" pumping principle, and a simple non-leak mechanical seal and O-ring gaskets. And these are just a few of the reasons.

Sound interesting? Send today for new Viking LP-Gas Catalog HB.

°Patent Pending

All Viking
"U" Pumps
Carry This Marker

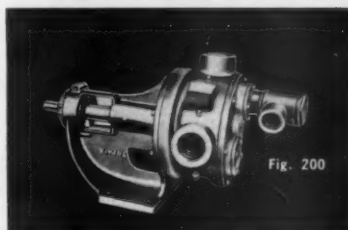


VIKING PUMP COMPANY

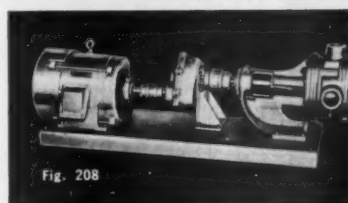


Cedar Falls, Iowa, U.S.A.
In Canada, It's "ROTO-KING" Pumps

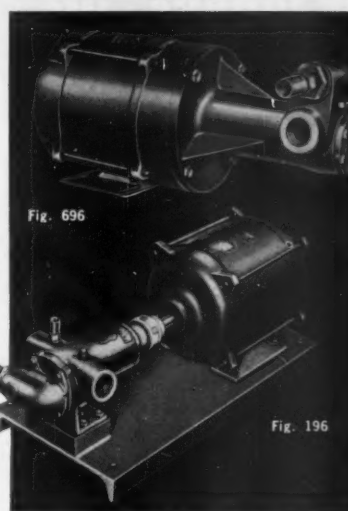
See Our File in Butane-Propane Catalog




Truck Mounting



Bulk Plant




Fueling and Bottle Filling



—guarantees a longer lasting, more brilliant finish—

GAS CYLINDER
ALUMINUM PAINT

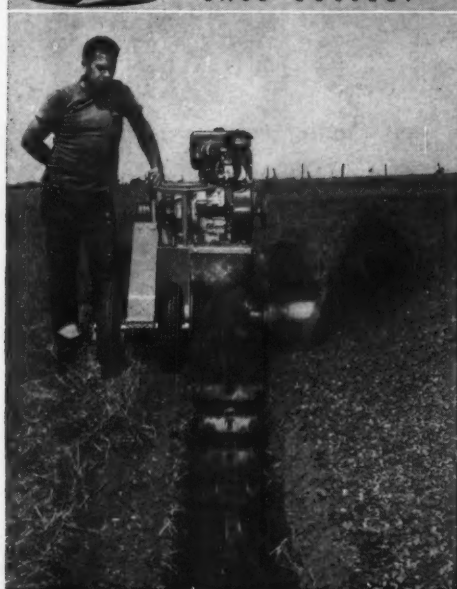
ILLINOIS BRONZE POWDER COMPANY, INC.
2023 S. CLARK STREET
CHICAGO 16, ILL.





The measure of Success

CALL COLLECT



COMPARE

SIZE: DIGS FROM 4" TO 16" WIDE AND UP TO 6' DEEP

COSTS: AS LITTLE AS 2c PER FOOT

ABILITY: JOB PROVEN

LIFE: AS HIGH AS 1/2 MILLION FEET

EASE OF OPERATION:

See a demonstration!

CALL COLLECT!

CHARLES MACHINE WORKS, INC.

616 B STREET • CALL COLLECT, FE 6-4404 • PERRY, OKLA.

"In my opinion, you always benefit most when dealing with a supplier who is a specialist. That's why my LP-gas contract is with Union Texas Natural..."



says Fred Lewis
Liquigas Company, Inc.
Cartersville, Georgia

SPECIALIZATION AT UNION TEXAS NATURAL MEANS

- quality products produced only in natural gasoline processing plants
- delivery and storage facilities directed only to serving the needs of LP-gas dealers
- a marketing organization completely familiar with every problem of dealer operations
- a specialized engineering staff immediately available to any dealer . . . large or small

All of these specialized services are yours with a Union Texas Natural contract. Talk to your nearest representative for complete details.



UNION TEXAS NATURAL GAS CORPORATION
ENTERPRISE BUILDING TULSA OKLAHOMA



People (cont.)

STANLEY J. NELSON — from manager of operations, Minneapolis, to manager of residential operations for Minneapolis-Honeywell Regulator Co. in Los Angeles. R. S. FRIES — from manager of the appliance controls division, Los Angeles, to manager of commercial operations, Minneapolis. RALPH L. ALLEN — from manager of the branch sales office operations to manager of the appliance controls division, Los Angeles. J. E. REMINGTON — from corporate credit manager, to manager of the branch sales office operations, Minneapolis.



S. J. Nelson



R. S. Fries

Minneapolis-Honeywell

E. W. DISSLER — from vice president and manager of Canada-Cities Service Petroleum Corp. to manager of exploration in Delaware. He succeeds REESE H. TUCKER, recently elected vice president of the parent Cities Service Co. C. E. COLE is the new exploration manager of Canada-Cities Service Co., Calgary, Alta.

DICK T. FENWICK — from assistant manager of the Denver division of Sinclair Oil & Gas Co., to assistant to vice president L. G. Rheinberger, head of the gas and gas products department, Tulsa. C. H. McCURE — from assistant manager of the Tulsa division to assistant manager of the Denver division.

JOHN H. SMITH — from Pure Oil Co.'s wholesale marketing division general office, Chicago, to the northwest wholesale marketing division office in Minneapolis. TOM MONROE — from southeastern LPG wholesale representative to wholesale marketing of propane sales, Minneapolis.

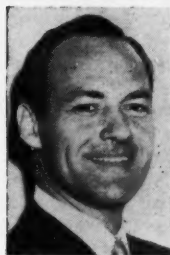
SIDNEY A. NORWOOD — from Systems Nelson, Inc., Clarksdale, Miss., to head the new bulk plant service for the LPG and AA Industries for Squibb-Taylor Inc., Dallas.

RICHARD KENNETT — from headquarters manager, Bridgeport, to vice-president of Sid Harvey of Conn. Inc. JOSEPH KNOB—from purchasing agent, York, Pa., to vice president of Sid Harvey of Pa. Inc. GERARD BURCHELL—from purchasing department of Sid Harvey Supply Inc., to purchasing agent for Sid Harvey, Inc.

E. O'KEEFE, pioneer of the LPG industry in South Carolina and owner of Coastal Natural Gas Co., Walterboro, S. C. was elected to the Clemson College board of visitors as one of two representatives from the first congressional district.

DANIEL P. CARLIN—from manager of mid-Atlantic sales district to eastern sales manager for John Wood Co.'s heater and tank division, Conshohocken, Pa.

MIKE F. GRACE—from district sales manager, Chattanooga, to product sales manager of central heating controls for Grayson Controls Division of Robertshaw-Fulton, Long Beach, Cal. ARTHUR G. BAITZ—from director of sales training in the Fulton Sylphon Division, Knoxville, Tenn., to the new post of director of engineering planning, Richmond, Va.



M. F. Grace
Robertshaw-Fulton



R. E. Roberts
Pyrofax Gas Corp.

ROSS E. ROBERTS, 64, executive vice president of Pyrofax Gas Corp., subsidiary of Union Carbide Corp., passed away on June 1, in Bowling Green, Ky. Mr. Roberts joined Pyrofax in 1927 and held various sales positions throughout the mid-West and East until 1938 when he became sales manager in New York. In 1950 he became manager. He was elected vice president of Pyrofax in 1953 and in 1957 was made executive vice president. He was a member of the LPGA and the Ancient Gassers.

TRAVIS E. MOSIER—from sales representative in Chicago, to sales representative in Moline, Ill. for Wolverine Tube.

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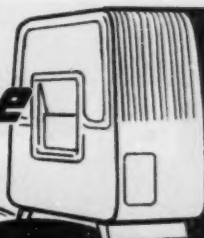
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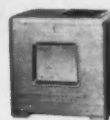
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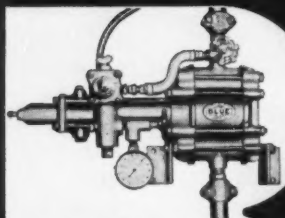
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People (cont.)

MAC T. FINLEY, retains his post of assistant to the president of American Bosch Arma Corp., as well as serving as the newly-elected secretary of the corporation.

DAVID B. FARMUN is newly appointed sales manager for Welbilt Air Conditioning and Heating Corp.'s Michigan district as well as sections of Ohio and Indiana, where he will organize distribution and promotion.

JAMES A. BAILEY, JR.—from manager of hydraulic hose sales to assistant manager of the hose sales department, North Chicago, for Goodyear Tire & Rubber Co. DONALD E. HARRINGTON—from sales engineer to manager of hydraulic hose sales.

GILBERT N. BELL — from general sales manager, Sprague Meter Co., Bridgeport, Conn., to vice president and general manager of sales.

WALTER W. WEEKES has been elected secretary of Hauck Manufacturing Co., Brooklyn, N. Y.

BPN

associations

TBDA group activities still "bigger, better"

AS the Texas Butane Dealers Assn. wound up another year of accomplishment with its 15th annual convention (Dallas, June 29-July 1), it could well afford to stick out its chest in typical Texas "bigger and better" pride.

Certainly, the year had been a full one. Activities got under way mere days after J. L. "Red" Weathers had taken over the gavel at the convention last June.

In July, hundreds of firemen from almost every fire department in the state attended the annual LPG Division of the Texas A & M Firemen's Training School. One of the three co-sponsors of the six-day school, TBDA has developed this public service gesture into one of its most noteworthy continuing projects.

Then in September, a series of Better Business Clinics began. This was a new project developed by TBDA's Ethics and Industry Improvement Committee. A six-hour, one-day course covering Customer Relations and Credit and Collection Procedures was presented by two University of Texas instructors. Designed to be taken into the field, the course was given 10 times for well over 100 dealers and their employees.

The following month, TBDA decided to beef up its membership. Dealers from all over the state attended a two-day mid-October meeting called by President Weathers. The first step in Weathers' program was to select those non-members who would be issued an invitation to join. Then, a booklet describing the association's activities was prepared and sent to these prospects. Finally, dealer members followed up with a personal call. To add incentive, the Pat & Chuck Supply Co. announced that the individual making the best showing in the membership drive would be awarded a trip for two to Mexico City. The net re-

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sult, announced at the January mid-winter meeting, was that 70 new members signed up! Bill Taylor, Gene Bumpus, Inc. (Plainview), won the trip.

It was also in October that TBDA's official publication, "Texas Butane News," won two awards, as the best association publication in the southwest and as the best marketing and merchandising publication in the same area. Like so many other bigger and better things from Texas, this monthly publication is really outstanding. It's current issue, for example, has 56 pages.

In December, when a possible future butane shortage had suddenly become a much-discussed subject, Weathers called a special two-day meeting of the board of directors. Representatives of all major LPG producers were invited, each man being allotted one hour to present his opinions. This information was kept confidential, but the board summarized its findings for the membership and presented this summary at the mid-winter meeting in January.

At least three other noteworthy happenings occurred at the mid-winter meeting. The group was presented a life insurance program, it took a close look at the threat of unionization, and it elected a dealer of the year.

Since Texas life insurance laws prohibit an association from sponsoring a group program, TBDA could only investigate and recommend the life plan. (A hospitalization insurance plan set up by the same agency 14 months ago now has 169 dealerships signed up and has already paid out \$88,018 in claims.)

Unionization was studied at a session open only to bonafide dealers. The board of directors has continued to review the situation and is exploring the possibility of securing a labor attorney "to secure the fullest possible degree of legal protection should the organization of the Texas LPG industry become a reality."

The Dealer of the Year, chosen from 18 district nominees, was Aaron Smith, manager of Blu-Flame Gas Co. (Troup). He was cited for being "largely responsible for the active interest of north and northeast Texas dealers," accomplishing this by "originating fellowship meetings and providing programs of great interest." Known for his "excellent judgment in the business world," he is "constantly called upon by fellow dealers for advice and counsel."

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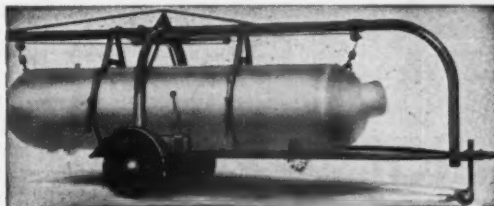
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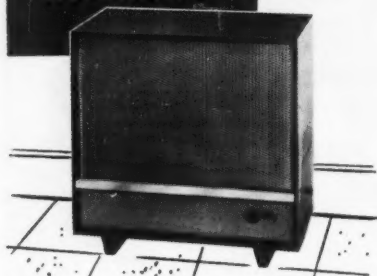
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Associations (cont.)

April was service school month and the 21 schools held that month were termed "one of the most successful projects ever undertaken by TBDA." Jointly sponsored by TBDA and Robertshaw-Fulton Controls Co., the schools attracted nearly 650 students.

Also in April, the board of directors reported that it had completed its study of collection agencies' plans for "aged accounts." It authorized a contract for the best plan and that plan is now in full operation.

May was management's month for education. The 15th Annual Management Workshop attracted 44 students, eleven of them for the first time, six for the second year, ten for the third year, nine for the fourth year, and eight for "post graduate" work. The faculty included many teachers and professors from the University of Texas. Among the subjects covered were: Butane Dealer Ethics, Management Essentials, Credit and Collection Procedures, Analyzing Accounting Reports, Business Law for the Butane Dealer, How to Train Employees, The Power of the Written Word, and Butane Dealer Problems.

The day after the Management Workshop closed, many Texas LPG dealers and their agricultural customers went to Harlingen to watch a two-day flame cultivation program sponsored by High Plains Research Foundation. (This is the same project that has been covered in a two-part BPN series ending this month.) Interest in the demonstration ran high, with many farmers actually traveling hundreds of miles to attend the activities.

That brings the association year around to June and the annual convention. Since it is taking place as these words are written, no account of convention activities can be presented here. Indications are, however, that it will be the biggest and best yet, even for Texas. Here's one indication. In 1958, TBDA decided to boost interest in its convention trade show by announcing a \$500 award which would go to some lucky purchaser of LPG equipment in the show. Sales totaled \$160,000. In 1959, the same Treasure Chest was adopted, followed and sales totaled one-quarter million dollars. This year, the prize is a new compact car and the goal is one-half million dollars!

New NGAA tests, specs in the mill

The Natural Gasoline Association of America expects the 1960-61 year to be the greatest in its 40-year history. Many NGAA committees are now hard at work on new and continuing projects. Among these, the following are of interest to the LPG industry.

Extensive revisions to "LPG Specifications and Test Methods," NGAA Publication 2140, were recently approved. The new edition, to be published this summer, will reflect these changes:

1) The existing two weathering tests ("Weathering Test Butane and Butane-Propane Mixture" and "Weathering Test for Commercial Propane") will be combined into a single test method for butane, propane, and B-P mixtures. The 95 per cent boiling point for propane will be changed from -38.5 deg. F. to -37 deg F.

2) Because of the adoption of the combined weathering tests, the old "mercury freeze" test will eventually be discarded. It will be continued in the revised 2140 as a supplemental test since it appears in many old contracts.

3) A new test method, defining the "end point index" will be included. It will be labeled "for information only" at present, and will determine the non-volatile residues that have caused consumer complaints about products. A specification, based on this test, will come after industry has had sufficient experience to determine proper limits.

Further study of LPG Specifications includes several methods that would limit ethane content of butane-propane mixtures. One of these methods is a formula based on vapor pressure and specific gravity of the mixture. Objective of the study is to hold the ethane percentage of B-P mixtures of low butane content to about that normally present in commercial propane.

A new and simpler test for determining moisture content, which, if practical, will replace the cobalt bromide and dew point tests.

A research project to obtain experimental enthalpy data for light

hydrocarbons has been recommended. Preliminary work indicates an appalling lack of data, particularly at low temperatures, says NGAA. Figures have been presented showing costs of inadequate data and the returns possible from research. Tentative plans call for placing selected phases of the work at universities with suitable personnel and equipment. Beginning phases will be on a modest scale, becoming a full-blown project in 1961.

A revised edition of the "Engineering Data Book" and a joint editorial committee (NGSMAA-NGAA) will be created. Nearly 30,000 copies of the 1957 edition are in use and a second reprinting is being contemplated to meet demand. The committee wants suggestions from users for new material that should be included. Send suggestions to NGAA officers.

A comprehensive, indexed bibliography of the literature on physical properties and design data for light hydrocarbons will be published this summer. References and abstracts for years 1946-1959 are included for articles dealing with such properties as enthalpy, thermal data, activity coefficients.

Manual of Recommended LPG Loading Practices is being developed. The manual will cover all phases of product handling including operations, equipment and regulations from the plant storage site to the loaded truck, tank car, barge or other transport. A final draft for the Technical Committee's approval is planned for the 1961 meet.

Richard Carver elected president of Arkansas LPGA

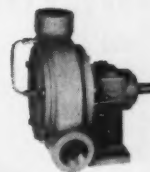
Richard Carver of Little Rock, Ark., was elected president of the Arkansas LPGA at the meeting in Memphis during the recent mid-South LPGA convention and trade show.

Cy Carney, Jr., Fayetteville, is first vice president; M. C. Raspberry, Helena, is second vice president and Larry D. Linder, Little Rock, treasurer. The new officers will be installed at the mid-winter meeting of the Arkansas group in Little Rock in January for the calendar year of 1961.



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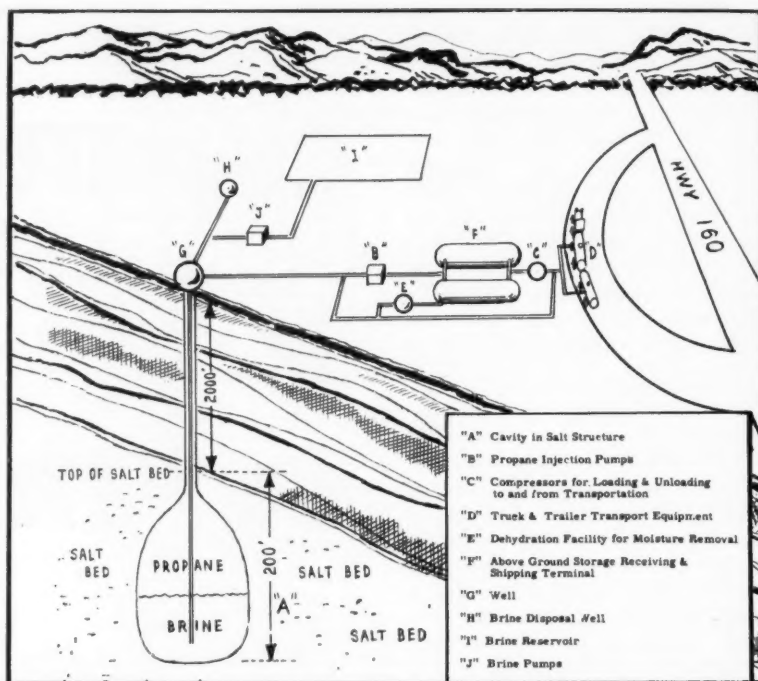
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Suburban Gas of Pomona releases underground storage project details

THE west's first retailer-owned underground storage reservoir for LPG will look like the drawing above when it goes into operation in August. Announced in April Highlights, the \$200,000 facility is being built near Moab, Utah, for Suburban Gas of Pomona, Calif. Initial capacity will be 4.2 million gal.

This new facility will be filled during the summer months by transports and trailers operating between Moab and production plants in Bloomfield and Lybrook, N. M. Suburban vice president R. C. Harris said the Moab propane will serve customers along the western slope of the Rockies.

Salt dome storage is not new, but is currently enjoying great popularity. The mechanics of the Moab project, therefore, are of timely interest.

A 2200-ft-deep well was drilled, the last 200 ft being in an 8000-ft-thick salt bed. Fresh water is now being pumped down the well into the top 200 ft of the bed. The salt

dissolves, forming a saturated brine. This process is continued until the dissolved cavity reaches the desired size.

To store propane, special pumps force it into the well. Being much lighter than the brine, it stays on top, forcing the brine to the surface via a pipe with an opening near the bottom of the cavity. On the surface, the brine will be stored in a reservoir capable of holding 6.3 million gal.

To recover the propane, the process is reversed. The brine is forced underground, pushing the propane out. After being dehydrated, the propane is placed in conventional tanks for short term storage. Above ground storage will initially be 38,500 gal.

At any time, the storage reservoir can be enlarged by pumping more fresh water into the cavity, dissolving more salt and forming more brine.

Texas Natural Gasoline Corp., Tulsa, Okla., is the general contractor for the project. ■

Part 3—How to convert a truck

JOHN E. HALLBERG • Chief Engineer, American Liquid Gas Corp.

Just about any engine can be converted to L.P. gas.

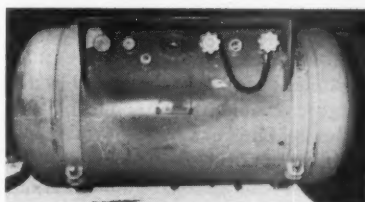
In Part I of this series, I mentioned that the truck field comprised but a small percentage of the potential LPG market. What I did not mention is that one truck conversion may net you the same profit as two or more fork lifts or farm tractor jobs.

WITH trucks, even more than with other types of power applications, it is imperative that you never make rash claims about what can be expected with LPG. You may have to prove your claim. If the truck installation doesn't prove out, you'll have it thrown back at you.

On a forklift, fuel consumption cannot be so readily judged as it can be on a truck. But on a truck, fractions of miles-per-gallon make a lot of difference, because trucks may be using a gallon of fuel every three miles. The average truck driver will tell you (and, in no uncertain terms) if the engine does not perform to his satisfaction. He will notice immediately any change in performance and in fuel consumption, either for better or worse.

Again let me stress the importance of giving the engine a thorough checkout, with special emphasis on the ignition system. *Check everything yourself. Study what you are going to do.*

Never tie up the vehicle until you



On truck conversions, a generous-size tank—1½ times as large as the gasoline tank—is recommended. Note the ¾-in. flare-and copper tubing running from the liquid outlet. The braid covering protects the tube and also helps prevent heat transfer from the exhaust and other sources.

have everything ready—the correct carburetion, tanks, brackets, and (one thing often overlooked) enough gas available to drive the truck to the nearest gas station. Small things like that affect your reputation and your work. Don't overlook them on any of your installations. You always lose money if you do.

There are many things to be considered before making a truck conversion:

Should you change the compression ratio? What about a cooled intake manifold? What should you do about the spark curve?

Are these things more trouble than they are worth? I say they are well worth the extra cost in many cases. Many truck manufacturers think so too. Some have engines especially equipped for LPG operation. The engine comes with high altitude pistons (higher compression ratio), cooled intake manifold, distributor curved for LPG — the works.

However, the owner of a vehicle may kick at going whole hog in the effort to convert to L.P. gas. The question, then, is: How far can you actually go without tearing the engine down completely, yet still hope to have the result compare favorably with gasoline on power and economy? The best plan is explain the pros and cons to the owner and let him make the decision. But be sure he is fully informed, and don't forget you are still a salesman.

Begin the conversion by giving the engine a complete checkout as described in the first article of this series. Insist on replacing points and condenser, and exchanging plugs for a set having a colder range. Next take compression readings.

Large trucks do not usually have a dual-fuel set-up, so you will have to remove the gasoline tank(s) and install one large or two smaller L.P. gas tanks. The cost of the tanks does not vary much between sizes, so choose the largest tank that will fit the situation and still look respectable. It is far better to have too much capacity than too little, because, although there are more L.P. gas stations today, they are never quite within walking distance when you run out of gas. That insurance of spare fuel is nice to have. *So don't skimp on tank size.*

After you have sized the tanks to the job, and before bolting the LPG brackets in place, tack weld them to the chassis, just enough to hold them. Once you have established the correct position for the tank(s), drill ½-in. clearance holes and bolt

EXCLUSIVE



A solid gasket was used to block off the bypass. This routes the bypass water through the converter before it re-enters the radiator. There are no restrictions to flow in this hook-up.



The converter is mounted on a standard bracket, so placed that water and gas lines are of minimum length. Note the gentle curve of the gas line to the carburetor.

them in. Do not use a cutting torch to make holes; drilled holes are much cleaner and more accurately sized than burnt holes.

With the tank in place, the most difficult job is over. You now turn to the actual installation. If possible, remove the gasoline fuel line completely from the vehicle; otherwise someone may use it, inadvertently, for LPG. If the fuel pump has a vacuum booster for the windshield wipers, it will be just as well to leave it on the engine; if not, remove it. Make or purchase a plate to cover any hole left by the fuel pump. Don't forget a gasket for the plate.

The gasoline carburetor comes off next. Most LPG manufacturers have replacement carburetors for most popular makes of trucks. As an alternative, you can use an adapter to fit the carburetor to the manifold.

The converter and solenoid lock-off should be joined together with a close nipple. Use a lock-off that has a filter combined. It is the easiest type to install, it saves time and fittings, and will usually be cheaper than separate units. This method eliminates one piece of L.P. gas hose and fittings, and, at \$1.65 per ft, this is a worthwhile saving.

Mount the converter as near the carburetor as possible and fairly low in the compartment — at least lower than the top of the radiator. The fender-wall is an ideal place.

Most systems have a vacuum switch which energizes the solenoid in the lock-off when the engine is

cranked for starting. The same switch shuts off the solenoid if the engine should die, preventing gas from leaking out of the system. Be sure to connect the vacuum switch into the intake manifold. Do not use the distributor vacuum or the power brake lines. Neither is a true vacuum. In the power brake lines, there will be a fluctuation when the brakes are applied; the distributor vacuum will die completely whenever the throttle is opened.

Now bolt an L.P. gas carburetor onto the manifold, remembering first to insert the gasket. Connect the gas hose from the converter to the carburetor. Make this as direct as possible, using straight-through fittings wherever possible.

Next find a suitable water take-off for the converter. You will want the converter to connect to the pressure side of the water pump. If you use the water hose that runs to the heater, make your connection to the converter on the straight part of the tee, so that the water to the converter comes from the engine straight, but has to make a turn to go to the heater. If the heater hose is much larger in diameter than the converter hose you should restrict the larger hose. Tap the inside of the tee and screw a threaded bushing in the water hose connection.

The water outlet line from the converter should be connected into the inlet to the water-pump. If there is no means of making this connection, use the heater return line. Here, again, the converter line should come straight into the en-

gine, and the heater return should be on the tee. If you tap in for water at any other location be sure to have a dip-tube on the fitting, especially on Ford products. Otherwise, you may have bubbles instead of water. The dip-tube should extend about one in. into the water. You will get the idea if you copy the dip-tube used on a Ford water heater outlet fitting.

Use No. 18 wire for all the connections. Always use terminals of the correct size. Large terminals on small terminal posts do not make good connections. Bare the wires and double them before crimping into the terminal. Begin wiring by finding a good 6- or 12-volt source, depending upon the system. The best place is at the switch. You want the terminal that is "hot" when the switch is turned on and when you are cranking. The accessory terminal is hot with the ignition on, but is cold during cranking. *So be sure to avoid this terminal.*

Having found the correct terminal, run a direct line to one terminal of the vacuum switch. Next run a wire from the other terminal of the vacuum switch to the "solenoid lock-off." If the solenoid has two wires protruding, connect the spare wire to a good ground. Make the wires as short and as direct as possible, and where they run together tape them.

Caution: Most 12-volt systems have a resistance between the switch and the coil terminal, which has been a constant source of



The new system, including updraft carburetor, solenoid lockoff, and converter, is shown after the conversion has been completed. The solenoid filter lock-off was mounted on the fire wall, at left; note the flared fitting on the copper tube leading to the lockoff. Flex-hose was used between lockoff and converter. Since the lockoff is solid to the chassis and the converter is mounted on the engine, a copper tube would be subjected to flexing, and might harden and crack.

trouble to the L.P. gas industry. So to be safe leave this circuit alone. If the system has an electric primer, use the same terminal on the ignition switch that you used for the vacuum switch. Run a short wire to one side of the primer button, and another to the primer solenoid. If the solenoid has two wires, connect the other wire to a good ground.

If you have planned to use copper tubing between the tank and the converter, be sure you have inverted or double flares. Compression fittings are not suitable for L.P. gas at tank pressure. Use sealant on all pipe fittings, but *not* on the flares. Be sure to connect to the *liquid line* on the tank. If you have fuel in the tank, open the fuel valve slowly, and check the fittings to the converter for leaks, using a soapy solution.

Set the carburetion to manufacturer's specifications for starting. Usually this will involve opening the throttle to fast idle. If there is a choke, close it; set the power-adjust screw on the rich side. If there is an economizer in the system, immobilize it by unscrewing it.

Prime the engine for approximately one half-second and it should start. When the engine has warmed up a little you can begin by adjusting the idling screw back to idling speed of about 500 rpm. With a tachometer, adjust the idle mixture, turning the screw in or out for the highest rpm (with a vacuum gauge, the highest vacuum is usually the best idle.) If you can get 12.8 on

the gasoline scale on an exhaust analyzer, your setting will be all right, but the smoothest idle is what you want.

You should use an analyzer for power adjustment. Render the economizer inoperative by screwing it all the way in. Run the engine to 1300 to 1400 rpm and adjust the power to read 12.5 to 12.8 on the gasoline scale. Final adjustments can be made on the road.

If you do not have an analyzer, you can set the power in the same way, but you must turn the power-adjust screw in to lean until the rpm begins to drop off. Mark this position. Now unscrew it toward rich until the rpm begins to drop again. Mark this position. Lock the screw about midway between the marks, or just a little on the rich side.

The economizer should be set at

the same rpm to 13.6 to 14.2. Using the analyzer or a tachometer, do the same as you did for adjusting power; adjust in until the rpm drops, then out until it drops again, then set to the middle and lock it.

Ideally, all settings for power and economy should be set on a chassis dynamometer. You should have the driver check it on one after the installation, if there's one available. It won't cost much, and it will more than pay for itself.

Cooling the intake manifold: V-8 manifolds are easy to cool. You simply cut off the exhaust crossover runners close to the carburetor and make two plates to cover where the exhaust gases come through the cylinder heads.

Where the intake manifold is also the valley cover and there are no separations between the intake runners, such as with some Fords & Chevys, you can braze plugs inside the runner to block off exhaust gases.

On six-cylinder engines the best method is to install one of the special L.P. gas intake manifolds. If the operator does not want to go to the expense of the manifold, then you can do justice to LPG by separating the intake portion of the manifold from the exhaust part and brazing a plate over the exhaust part. It is difficult to do this with some manifolds; in such cases all you can do is make the exhaust deflector valve inoperative by disconnecting the bi-metal spring from its retaining pin, and fitting a spring to hold the valve in the closed position. This will deflect all the exhaust gases through the exhaust pipe instead of around the intake manifold. ■



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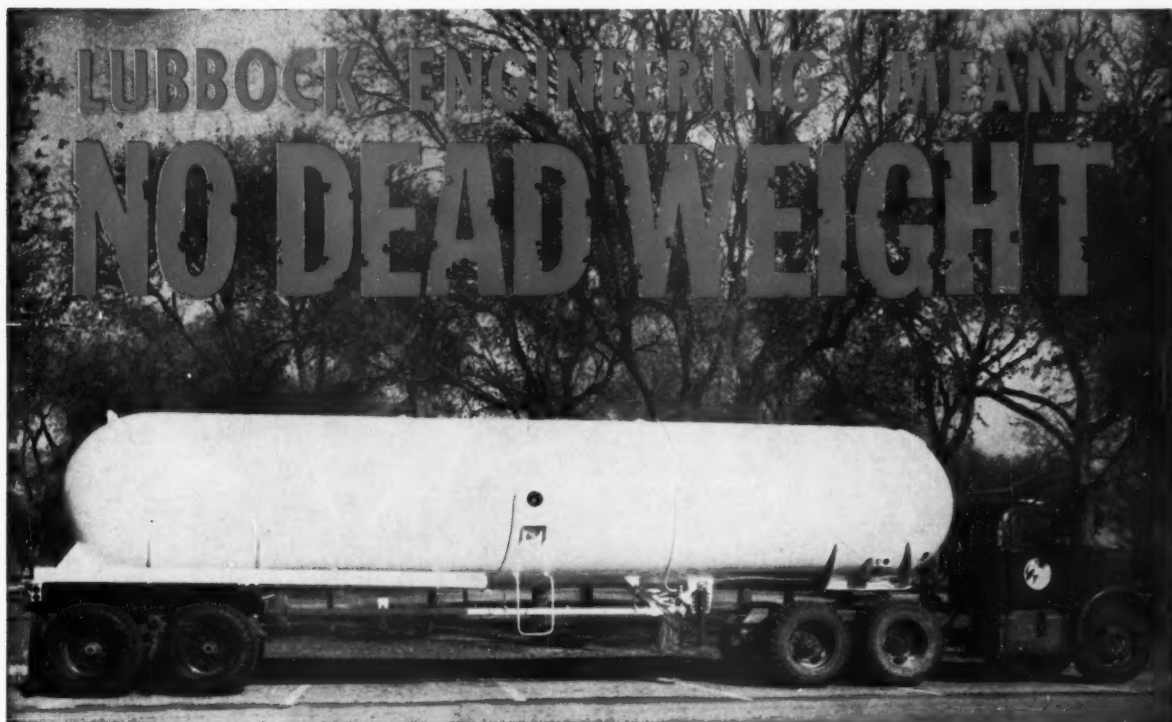
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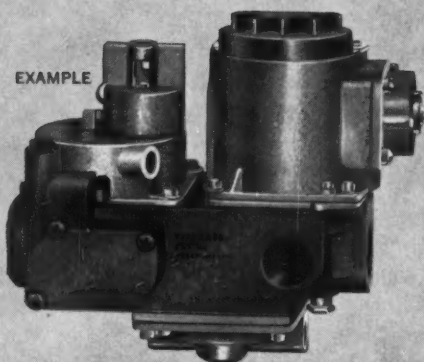
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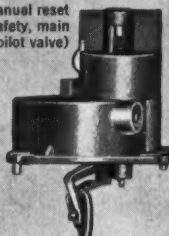
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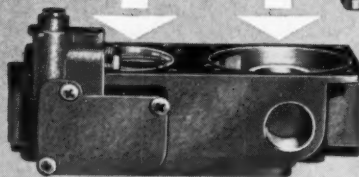
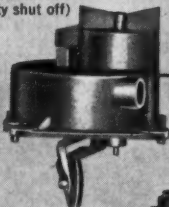
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valve—100% safety, main
gas cock, pilot valve)



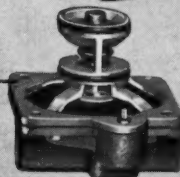
MR-80 (Manual reset
with main line
safety shut off)



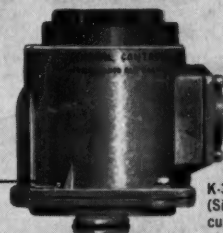
BASIC



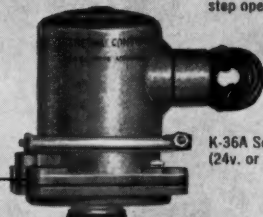
V305B Regulator
(Single seat)



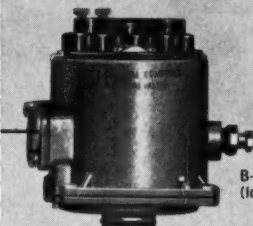
V305C Regulator
("Hi-Flo" Type)



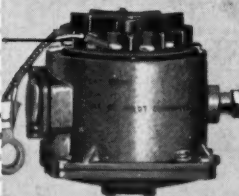
K-36H Hydranoid
(Silent, silicone
cushion with
standard or
step opening).



K-36A Solenoid
(24v. or 120v.)



B-56 Diaphragm
(low voltage)



B-66 Diaphragm
(Millivoltage)



